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The OIL WEEKLY

OIL and GAS ENGINEERING

FOR OIL AND GAS PRODUCTION AND PIPE LINE DIVISIONS

THE WEEK'S NEWS INTERPRETED

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APRIL 10, 1933
ne 69 Number 4

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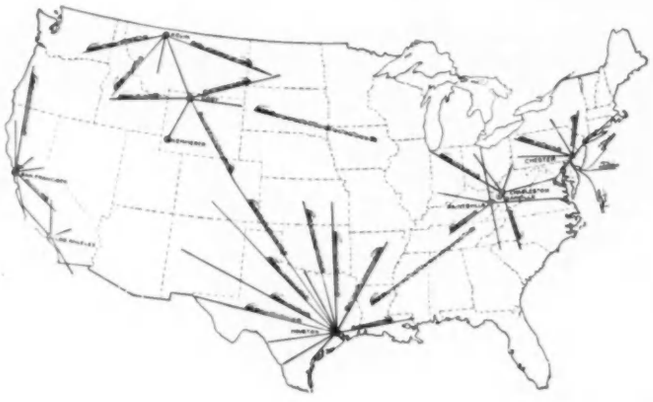

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Editor

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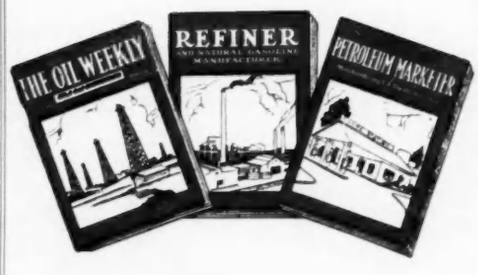

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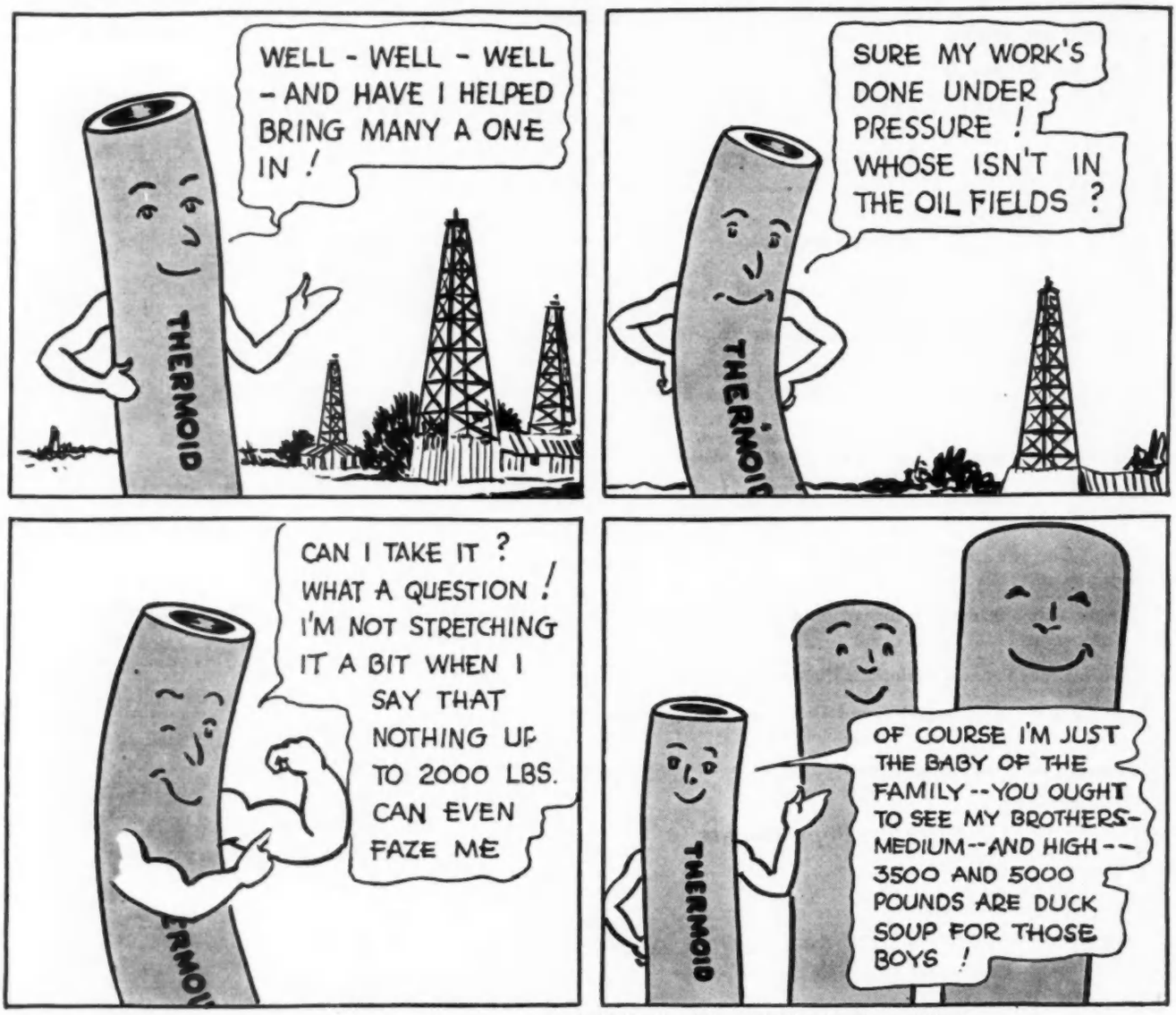
THEY WORK UNDER PRESSURE ~ AND HOW!


WELL - WELL - WELL - AND HAVE I HELPED BRING MANY A ONE IN !
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THE OIL WEEKLY

FOR OIL AND GAS PRODUCTION AND
PIPE LINE DIVISIONS

ENGINEERING • NEWS • STATISTICS

The Changing Panorama

Texas—Taxes—Muddle

At last the oil industry in Texas is learning what the railroads learned a generation ago—if you take your troubles to Austin long enough you will come away with your tax burdens increased.

Out of all the welter of activity at Austin in which the oil industry has participated for two or three years, it is evident at this writing that all the oil industry is going to get will be grief and added taxes.

Because, not content with the large percentage of the state's income provided through taxes already established on the oil industry, the Texas lower house seems of a mind to saddle a heavier burden on the oil business. True, the most recent contribution to oil industry's taxes added by the lower house during last week probably will not successfully run the gauntlet of the more conservative senate—but the signs are pointing which way the trend lies.

This idea of a graduated gross production tax (see page 7) which gained legislative adherents at Austin last week is not new. But in the past it has had little favor. It was only the bitterness of the factional fight between groups within the oil industry that made possible its being tacked on another bill—and getting by.

There are so many reasons why the bill should not pass that it seems idle to comment on them. But we have spent so much of the week listening to speeches on the "oil situation" and the oil tax at Austin that we desire the personal satisfaction of saying what we think about it—and then of turning out the light and going to bed.

If the bill should pass, it will have the effect of perpetuating the hard times the industry now has. There are few oil men, even the small producer owning small marginal production, who deep in their hearts do not feel that their chance to come back is through getting some flush production somewhere. There may be a few exceptions to the rule—some oil men in whom the spark of personal ambition has been snuffed out by the cross winds of opinion and the dearth of profits—but they are few. If the tax bill should pass then he who is fortunate and does develop flush production will pay the state through the nose for the privilege.

We were asked Friday by a layman—an intelligent sort of man who knows nothing about the oil industry and who wonders why the oil business can not run its own affairs:

"If that graduated tax bill should pass wouldn't the Texas producer be at a handicap in selling his oil as compared with a producer in Oklahoma? Would a refiner want to pay 25 cents more, for instance, to a Texas producer than he would to an Oklahoma producer? I hear a lot of talk about building up a wall around the United States, but wouldn't this build up a real wall around Texas—a wall within which no refiner would want to come?"

We are told that when the bill gets to the Senate it will see the tax section divorced from the conservation

The Oil Man's Calendar

APRIL
- 13-15 *Petroleum Industry Electrical Association, Tulsa.*
- 20-21 *National Petroleum Association, Cleveland Hotel, Cleveland, Ohio.*

MAY
- 15-16 *National Oil Scouts Association, Plaza Hotel, San Antonio, Texas.*
- 15-17 *Natural Gasoline Association of America, Tulsa.*
- 17-19 *American Petroleum Institute Mid-Year Meeting, Mayo Hotel, Tulsa.*
- 22-28 *Oil Equipment & Engineering Exposition, Convention Hall, Houston.*

JULY
- 19-25 *World Petroleum Congress, London, England.*

section of the bill—and that the tax section will not pass. Maybe so.

So far as we are concerned a new commission is not worth the added tax burden proposed. Sometimes, anyway, we are torn between sympathy and disdain for the present railroad commission. They have made a holy mess of things—yes. But they have had a lot of help! The courts have helped—and legislature on more than one occasion has helped—and factions of the oil business have helped more than all.

The trouble has been that most of the factions have been actuated to some extent by selfishness. The producer in West Texas, who has had his flush at a better price than East Texas has ever known, wants to hold down East Texas so that he will continue to get a better price in West Texas. The Gulf Coast operator has had a portfolio of good reasons why everybody but him should be prorated. The major companies—at least some of them—have talked proration and have dodged around the corner to help somebody violate it. The most powerfully entrenched (from a financial standpoint) of the companies—or at least some of them—have urged that everybody contribute to the sacrifice of proration and have then contributed to the distress oil situation by heavy withdrawals from stocks.

Now as we see it, the West Texas producer, the Gulf Coast producer, the East Texas operator, and the major operator all have acted within their own rights—and according to the dictates of their own personal situations. But this cross current of opinion and self interest certainly has not put the oil man at Austin in the best light when the average member of the Texas lower house has examined him. We get the impression that the average legislator thinks that all oil men are liars, and rich.

We ran out of predictions sometime back but if we reached into the bag for one it would be this—NO OIL MAN will be satisfied with what he is going to get at Austin!

The little independent may get a divorcement of pipe lines from the major companies—but he will find it will not put more money in his pocket and he will simply be damaging an institution which once upon a time helped to build substantial fortunes in the oil industry.

But in the face of the experience of other industries in going to their state capitols to get their troubles cured, the oil industry has been going to these same state capitols and now the oil industry is going to Washington.

Just how Roosevelt is going to solve the oil man's problems is not clear to us. We have a great admiration for his aggressiveness—for his ability to get things done—but to do what is proposed will mean the revival of the old oil state compact—which in turn means that the states must adopt uniform laws with the idea that a general overlord shall say finally what shall be done in the way of settling the inevitable squabbles which will arise as to what this state or that state shall be allowed to produce.

Will the states give that power to somebody else? Maybe it would be a good thing—a lot of intelligent men have said it would be—but our guess is that the states will not surrender anything worth while in the way of authority.

Speed Drilling

More attention has been paid recently to reducing drilling time on wells, and thereby reducing the cost of the well. It was found that most time could be saved by reducing the period during which the rig is being moved. How definitely arranging each step in this procedure has reduced the time required is interestingly presented in one of the papers read before the Houston meeting of the American Petroleum Institute Division of Production. Page 13.

Reports to the American Petroleum Institute from refining companies controlling 91.6 per cent of the 3,856,300-barrel estimated daily potential refining capacity of the United States, indicate that 2,121,000 barrels of crude oil daily were run to the stills operated by those companies during the week ended April 1 and that they had in storage at refineries at the end of the week, 40,668,000 barrels of gasoline and 123,823,000 barrels of gas and fuel oil. Gasoline at bulk terminals amounted to 12,319,000 barrels and 1,517,000 barrels were in water borne transit in or between districts.

Cracked gasoline production by companies owning 95.4 per cent of the potential charging capacity of all cracking units, averaged 430,000 barrels daily during the week. Page 27.

Drill Pipe

Normally, drill pipe is amply strong to resist failure from all stresses that reasonably may be encountered, save bending. It is concluded that flexure of the compressed portion of a drilling string into cavities of even moderate dimensions most reasonably explains the majority of drill pipe failures not directly occasioned by such causes as actual pipe flaws or damaged threads. Use of a high yield point steel in the drill pipe immediately above the drill collar, or oversize pipe used for stiffening, should considerably reduce the number of failures from this cause. Page 19.

Texas Industry Shows *Solid Front Against Exhorbitant Tax* Measures

Austin, Texas.—What was thrown into the hopper of the Texas house of representatives as a bill to remove natural resource regulations from the Texas Railroad Commission came out last week as a measure which will, if enacted give Texas oil producers opportunity to contribute heavily to the expense of state government. An amendment, a graduated production tax, was attached to the bill.

As amended the measure was engrossed by the house last week. This body recessed, however, Friday without final passage. So the whole question will come up for final reading there next week and then go over to the senate for another round of debate.

Somewhere in the house hopper the administration tied the tax amendment to the conservative measure. That the tax is an administration move became evident when James E. Ferguson, husband of the governor, wired to Joe Danciger at Fort Worth who with many others entered a protest against the tax feature, as follows:

"The arguments you advance against the graduated tax can be urged against any other tax. Unfortunately we have to collect taxes to carry on the government."

There was more to the telegram but nothing to indicate that the Ferguson mind had been changed by protest both independent and major.

Evidently the bill, passage by the house being granted, will meet opposition in the senate. Independent producers were eager for a new commission to take proration matters out of the hands of the railroad commission and place them in the hands of a different body. But when this measure gets tied up with another that will involve a tax of 25 cents a barrel on crude oil produced in excess of 250 barrels daily from one well, a new commission becomes less attractive.

As for the major concerns, they seem to want most anything except what they have in East Texas, except that they do not want higher taxes. Protests over the tax feature found both independent producers and major concerns in harmony on one issue and they are due to hold these harmonious notes when the senate committee begins to question witnesses.

Extreme penalties are part of the measure. Failure to report well output could be punished by fines of $1,000 and a jail term of one year. Failure to abide by orders of the new commission would be punished by penitentiary terms of from one to five years.

Oil producers have been left in quandary. Many want the new commission. Few want the graduated production tax. That an effort will be made to have the tax amendment killed in the senate is accepted. Should this be done the question of approval in the house is in doubt. The situation stands as one with the tax as a penalty for gaining a change in the administration of proration.

Gossip was current around the capital last week to the effect that James E. Ferguson, husband and director of all that the Texas governor advocates, had selected the membership of the Natural Resource Commission. C. C. McDonald, Wichita Falls attorney; R. D. Parker, chief supervisor of the oil and gas division of the railroad commission; and Cecil Storey, East Texas attorney, are the men mentioned. Friends of the Fergusons, however, branded this as something expressed in a three letter word more pungent than gossip.

Meanwhile the Texas Railroad Commission was having one of its busy weeks. Action in the lower branch of the legislature indicated an early end of the commission's authority over oil. Still the commission went into a state-wide proration hearing, which involved only the East Texas field. The upshot of this was an order that this field be closed in for five days beginning April 6.

Then the commisison sent the following message to Franklin D. Roosevelt:

"It is with a great deal of pleasure that we report to you that the Railroad Commission of Texas ordered the East Texas oil field closed completely down at 7 a. m. this morning and the shutdown was accomplished promptly and effectively.

"We have ordered this field to remain

East Texas Shut Down *With Wells Relieved by* Court Order Open

Kilgore, Texas.—With few exceptions, the operators in the East Texas field are abiding by the Texas Railroad Commission's order calling for a complete shut-down between April 6 and April 11. Some of the independents operating under the protection of federal court restraining orders against the commission, and owners of seepage wells in the north end of the field have taken advantage of their immunity from the order.

Lease owners deliberately ignoring the shut-down order are being reported promptly by neighboring lease owners, and members of the enforcement staff are dispatched to the scene to close down such wells. Throughout the night preceeding the start of the production holiday owners of hundreds of wells made the most of their opportunity to fill up all available lease tankage. Gas flares burned brightly in nearly all sections of the field. Those that filled up tankage will be that much ahead as no prosecution is to follow. However, they will be forced to sell the excess production to spot crude buyers, or to independent refiners at about one half the posted price.

Suspension of production is becoming somewhat of a necessity when proration enforcement powers of the commission lose their influence over the rank and file of operators. Experience gained through two previous shutdowns applied by the state proved conclusively that such a procedure is effective to a large extent in curbing flagrant violations, especially if a new proration order is given at the termination of the inactive period. In this manner operators that make a practice of challenging the validity of the orders in state and federal courts have to start all over again.

The first and only complete shutdown on production took place on August 17, 1931, when martial law prevailed through orders of the governor, and continued until 7 a. m., September 5. Production was resumed on a per-well basis on the latter date, and continued with a graduated decline taking place at intervals until December 10, 1932, when a gesture was made by the commission to evade a federal court decision by adopting a combination per-well, acreage and bottom hole pressure plan. The operators opposed to any consideration of acreage factors succeeded in resisting the order, and the field was again shut in at noon December 17, 1932. Although this second

(*Continued on page 32*)

closed down for a period of five days for the purpose of taking potential tests on the wells at the close of the five days.

"We thought it would be encouraging to you to know that the Texas Railroad Commission has the situation in the East Texas field in hand.

"This was the only field in Texas giving any trouble.

"We heartily endorse the course suggested by you that a law be passed by Congress making it illegal to transport oil interstate unless said oil has been produced legally and further that oil pipe lines be divorced from producing and refining and retail selling."

Whether there will be a potential test of the field and the nature of it are questions yet to be answered. Federal Judge Randolph Bryant previously had granted an injunction restraining the open flow test scheduled earlier. Neal Powers, assistant attorney general, drew the assignment of seeking modification of this order from the federal judge. Also members of the commission were scheduled to appear before this judge to answer the charge that they were in contempt of the federal court when they issued an order allowing the East Texas field to produce 400,000 barrels daily, after a court of three federal judges had held a previous order of similar proration illegal.

With the federal court obstacle removed, indications are that an order will be issued for taking open flow records for the whole field.

Marginal Well Bill Amendment Offered

Austin, Texas.—A bill has been prepared by Representative Walker of Vernon, to amend the marginal well bill in Texas. It is necessary to obtain the consent of the house, before the measure may be introduced.

Marginal well allowances, under the terms of the new bill, will be changed to read as follows:

Old Bill		New Bill	
Depth, Feet	Barrels	Depth, Feet	Barrels
0-2000	10	0-2000	10
2000-3000	20	2000-4000	15
Below 3000...	40	4000-6000	20
		6000-8000	25
		Below 8000...	30

This would give an allowance of only 15 barrels per well to pumpers in East Texas, compared to the present 40-barrel allowance. Thus, only 150,000 barrels would be required on the marginal well basis, to meet the requirements of the ruling of the attorney general.

Under this plan it should be possible to reduce the top allowable of the field to 250,000 or 300,000 barrels, instead of 600,000 or 1,000,000 that is expected.

Texas' Allred Confuses *State-Wide Hearing* With Conclusions

Austin, Texas.—An opinion furnished the Texas Railroad Commission by Attorney General James V. Allred threw the state-wide proration hearing into confusion as it opened on Monday.

There were two important conclusions in this opinion which are expected to have an important effect on proration, particularly on the allowable for the East Texas fields.

Allred stated that since the allowance for marginal wells in East Texas under the present statute is 40 barrels per well, it is doubtful if any other well in the field can be cut below this figure. He pointed out that it could readily be contended that this is discrimination against the flowing wells. This would indicate the necessity of a top allowable of at least 400,000 barrels for the field on this basis. Allred stated further that the opinions and decisions of the federal courts in the various cases on East Texas, indicated that there should be a "spread" between the allowables for prorated flowing wells in proportion to their ability to produce, or on the potential basis. Estimates of the amount required to meet with this conclusion varied from 200,000 barrels to 600,000. Thus, under the terms of this opinion, it would be necessary to have a top allowable on the field of 600,000 to 1,000,000 barrels.

Another point in the opinion pointed out that unless an allowance is made on this basis of acreage, Rule 37, the rule governing the spacing of wells in East Texas, could not be enforced. Allred explained that if proration was to be on the basis of potential alone, an operator should be permitted to increase his potential as much as possible, and that this could be done only by the drilling of additional wells.

The hearing had hardly opened when R. E. Hardwicke, attorney for the Texas Oil and Gas Conservation Association, inquired of the commission concerning its reaction to this ruling.

"This will certainly lead to great physical waste," Hardwicke pointed out. "Am I to understand that the commission is going to follow this opinion?"

"Yes," replied Lon A. Smith, chairman of the commission, "the attorney general is our lawyer and we are going to follow his advice. It is time that we stopped guessing."

Attorneys for the major companies immediately attacked the ruling, and urged the commission to ignore it.

They suggested that one of two alternatives be followed. First they asked the commission to issue an order prorating marginal or pumping wells in the field below the 40 barrel mark. They pointed out that there is a grave question as to the validity of this statute, and that the marginal well operators would quickly contest the order in the courts, and the propriety of the law could be determined.

This proposition was promptly declined by the commissioners, who indicated that they had no desire to further entangle themselves with the courts.

"Do you want us to go to jail?" inquired Chairman Smith.

The second proposition was to have the members of the commission and the attorney general request the legislature to amend or repeal the marginal well law.

"You major companies," replied Allred, "have men here in Austin all the time making requests of the legislature, both formally and informally. If you want this law changed, make the request yourselves."

Three Plans on East Texas

The commission also adopted this view. Further argument stopped, and the taking of evidence began, which included the presentation of three plans for prorating the East Texas field.

M. Albertson, petroleum engineer for the Shell Petroleum Corporation, presented a plan which he stated would be equitable and meet with the requirements of the federal courts. He would consider only two factors, the acre-feet of Woodbine formation (not Woodbine sand) beneath each lease, and the bottom-hole pressure of the wells on the lease. He declared that these two factors were sufficient.

Allred and other members of the attorney general's department, interrogated Albertson at length, seeking some method by which the commission might be able to take open flow potential tests in the field.

The witness stated that these tests would be worthless, as they would give no indication of the true potential of the wells, and he insisted that the average equipment of the wells in the field was not designed with this idea

in mind, but was designed to operate the wells under restricted flow.

Detail of Albertson Plan

The allowable would be distributed as follows: One-fourth on acre feet of Woodbine formation, and three-fourths on acre pressure.

$$\text{Allowable for tract} = \frac{(\frac{1}{4} \text{ of } 325{,}000)}{114{,}000} \times \frac{\text{average Woodbine thickness of tract}}{\text{average Woodbine thickness of field}} + \frac{(\frac{3}{4} \text{ of } 325{,}000)}{114{,}000} \times \frac{\text{average loss of pressure of field}}{\text{average loss of pressure of tract}}$$

This can be expressed thus for any condition in the East Texas field at this time with an assumed allowable for the field of 325,000 barrels, and original pressure of 1625 pounds.

It is understood in presenting this plan that the proportions of the factors as used are not fixed, but are subject to modification from time to time in the light of future experience in the field operating under these principals.

Adjustments, in the form of concessions to small tract owners, could be made outside the formula.

Blaine Johnson, vice president of the Simms Oil Company, was placed on the stand by Myron Blalock, Marshall attorney, in an effort to prove that it is practical to take open flow tests in the field with present equipment.

Johnson detailed experiences encountered by his company in taking such tests on 10 wells. He declared that no difficulty was encountered, and that results were sufficiently satisfactory to enable them to determine with reasonable accuracy the potentials of the various leases.

He stated that on a two-hour test, the properties produced an average of 92 barrels per well during the first hour, and 88 barrels during the second. He said that these tests, in his opinion, if taken throughout the field, would show an average potential of 75 to 80 barrels per hour per well.

Johnson suggested that the tests could be taken by zones, or by areas, so that it would not be necessary to open up the entire 10,000 wells simultaneously to get the information.

The testimony of Albertson and Johnson, however, was not so diverse as it might appear. Albertson sought to determine the potential productivity of the leases, while Johnson was attempting to find out how much the individual wells would produce.

Blalock then placed J. S. Hudnall, Tyler geologist, on the stand. Hudnall appeared at the invitation of the commission. He was prepared with plans for taking the open flow tests and for prorating the field on this basis.

He suggested that the commission take potential open flow tests in the field by flowing 20 per cent of the wells on five succeeding days. This was to be preceeded by a five-day shut-down, which is to equalize pressures in the field and enable operators to obtain fairly accurate tests.

By the method he proposed, each of the wells in the field would be open only two hours during the 10-day test period, as they are to be closed down completely after the test is made, until

(*Continued on page 32*)

Texas Commission *Sets Allowable For Fields* Outside of East Texas

Austin, Texas.—Allowables for all Texas fields except East Texas were set by the Texas Railroad Commission to become effective April 7 and continue until August 1. Production from fields other than East Texas will be 51,700 barrels daily.

Evidently this order contemplates holding the East Texas field to around 400,000 barrels daily. But testimony before the commission as to methods of proration and output of wells indicated that the field would have to produce as much as 600,000 barrels daily in order to give equitable output for the conflicting interests in the field.

Output for East Texas, however, will not be fixed until after members of the commission have answered the contempt proceedings standing in federal court at Sherman before Judge Randolph Bryant.

Comparative Table of Allowables for Texas

Fields—	Old Order	New Order April 6
Panhandle	43,500	45,500
North Texas	56,000	56,000
West Central Texas	27,500	22,500
West Texas—		
Yates	60,450	60,450
Winkler	25,000	23,000
Howard-Glasscock	16,000	16,000
Ector	4,000	4,000
Crane-Upton	12,000	12,000
Reagan County	20,000	20,000
Other Fields	16,900	14,700
West Texas Total	154,350	150,150
Southwest Texas—		
Darst Creek	14,000	13,000
Salt Flat	6,500	6,500
Duval County	6,755	11,900
Other Fields	14,815	29,950
Southwest Texas Total	42,070	61,350
East Central Texas—		
Van	52,450	52,500
Other Fields	6,700	6,700
East Central Texas Total	59,150	59,200
Gulf Coast—		
Rabb Ridge	16,500	16,500
Conroe	35,000	35,000
Raccoon Bend	4,500	4,500
Sugarland	7,500	7,500
Barbers Hill	17,800	19,800
Goose Creek	3,200	3,200
High Island	6,500	7,500
Hull	5,500	5,000
Humble	5,125	5,000
Pettus	3,800	3,800
Pierce Junction	4,700	4,700
Refugio	7,700	7,000
Spindletop	2,700	2,700
Other Fields	24,750	24,750
Gulf Coast Total	145,275	146,950
East Texas	400,000	*400,000
State Total	927,645	941,700

*Note the 400,000 barrels allowed for East Texas is under the present order, which extends to August 1. However, it is expected that this order will be materially altered, following the open flow tests.

Federal Government *Will Hands Off Except* Regulation of Shipments

Washington, D. C.—Calling upon the governors of the oil-producing states to take action to meet the emergency in the oil industry, President Roosevelt on April 3 made it clear that participation of the federal government would be confined to legislation to control the interstate transportation of illegally-produced oil and its products and divorcing pipe lines from other branches of the oil industry.

There will be no federal "dictator," he indicated, nor will he invade the field of the state governments by urging a 15-day suspension of flush production, recommended in the report of the so-called committee of 15 following a three-day conference of state officials and oil men with Secretary of the Interior Ickes.

The president's action was favorable both to the committee of 15 and the group under the leadership of John B. Elliott of California, which refused to approve the majority's report.

Control of the transportation of "hot" oil was recommended by the committee; legislation separating pipe lines from production was recommended by the Elliott group.

Endeavoring to spur the governors of the oil-producing states to prompt action, President Roosevelt, in a letter to the governors of Arkansas, California, Colorado, Illinois, Kansas, Kentucky, Louisiana, Montana, New York, New Mexico, Ohio, Oklahoma, Pennsylvania, Texas, West Virginia, Rhode Island and Wyoming, declared that "there seems to be a widespread feeling that an emergency exists in the oil industry calling for action and it is hoped that the governors of the states affected, after consultation with each other, will take action appropriate to meet it."

To each of the governors there was sent with the letter, copies of the majority and minority reports, resolutions adopted by the representatives of the governors, and letters sent to Secretary Ickes by various interests participating in the conference.

The president called special attention to the first two recommendations of the majority report, urging him to call upon the governors of California, Kansas, Oklahoma, Texas and New Mexico to close all flush pools until April 15 and asking for the enactment of conservancy laws in states which do not now have such statutes.

"It is obvious," he pointed out, "that the action proposed to be taken in these paragraphs is within the sole authority and jurisdiction of the interested states.

U. S. Without Authority

"The president of the United States has no authority to declare a moratorium such as is proposed, and he might be regarded as infringing on the sovereignty of the states if he should make the suggestion contained in paragraph A-2."

With reference, however, to the recommendations in paragraphs A-3 and A-4 of the majority report, asking the president to recommend enactment of a law prohibiting the transportation of illegally-produced oil and segregating pipe lines; providing for strict enforcement of the federal gasoline and pipe line taxes and setting up in the Internal Revenue Bureau machinery for cooperation with the states through the collection of information on the movement of products for the benefit of the state tax officials, the letter gave unqualified approval and a promise of prompt compliance.

"I am of the opinion that the suggestion that the congress pass legislation prohibiting the transportation in interstate and foreign commerce of any oil or the products thereof produced or manufactured in any state in violation of the laws thereof, is well considered," the president wrote. "I am prepared to recommend such legislation to congress as a contribution on the part of the national government toward the solution of the difficulties in which the oil industry finds itself.

"I also approve of the recommendation in paragraph A-4 of this report.

"The report of the Independent Petroleum Association Opposed to Monopoly recommends 'the enactment of emergency legislation by congress divorcing oil pipe lines engaged in interstate commerce from other branches of the oil industry.' I am of the opinion that this is a reasonable request and that such legislation should be enacted at as early a date as possible."

There are other suggestions and recommendations which "on their face are fair and reasonable," the president declared, but which do not require immediate action. These recommendations he said, can be taken up at a later date, possibly following further conferences between the representatives of the state and the industry with officials of the administration.

Suggestions for a "czar" for the oil industry contained in paragraph A-6 of the majority report were not alluded to in the president's letter. That paragraph recommended that the president request emergency legislation authorizing the appointment of a personal representative to cooperate with the state authorities in bringing about compliance with the program laid down in the report.

GOVERNORS WILL MEET APRIL 8 IN AMARILLO

Oklahoma City.—Governors of Kansas, Oklahoma, Texas, New Mexico, Colorado and California will meet in Amarillo April 9 to consider the proration and regulation of oil production in keeping with plans which grew out of the recent conference at Washington. William H. Murray, governor of Oklahoma, called the conference after correspondence with other governors. The governors of Kansas, Oklahoma, Texas and California asked for the conference. Those of Colorado and New Mexico have been invited.

Governor Murray indicated that the question of uniform regulation of oil fields would be considered.

Governor Ferguson of Texas has named J. S. Bridwell, C. B. Long, L. T. Burns, all oil producers, and Edward Howard, newspaper man, to attend the conference. These men live in Wichita Falls.

Expect Nye Resolution on Suit Compromise to Pass

Washington, D. C.—Approving the Nye resolution for settlement of the judgment against the Pan-American and Richfield Oil Companies, without debate, the Senate on April 4th sent the measure to the House, where similar action is expected in the near future.

The legislation was before the last session of congress with the approval of the Hoover administration, and has been given the approbation of Attorney General Cummings and other officials of the Roosevelt cabinet.

Under the terms of the resolution, the government would release its claims against these oil companies and others in connection with collections of the judgment of more than nine million dollars returned in California last November, in return for at least five million dollars from the assets of the two companies, now in receivership. Unless this compromise is accepted, the Senate was warned by Senator Nye, the government at this time could not win as much as a million dollars by attempting to collect on the judgment.

John A. Ritter *Named Chairman Southwest* Division of Production

Houston.—Aside from a particularly interesting technical program, an important feature of the spring meeting held here April 7 and 8 by the Southwestern District of the American Petroleum Institute Division of Production was the annual election of officers for the regional organization.

John A. Ritter, Sun Oil Company, Dallas, Texas, who has taken an especially active part in affairs of the southwestern district organization for several years, was honored by election as chairman of the district for the coming year. He served during the past year as vice chairman for the East Texas section. In his rise to the most important office in the district organization Mr. Ritter succeeds Blaine Johnston, Simms Oil Company, Dallas.

Five vice chairman to represent the different sections of the district were also elected by the membership at the Houston meeting, those new officers including the following: J. E. Warren, Continental Oil Company, Texon, vice chairman for West Texas; R. D. Risser, Shell Petroleum Corporation, Kilgore, vice chairman for East Texas; Paul Hubbard, Gulf Production Company, Houston, vice chairman for the Gulf Coast; C. B. Clement, The Texas Company, Wichita Falls, vice chairman for North Texas; and H. W. Bell, Lion Oil & Refining Company, El Dorado, Arkansas, vice chairman for Arkansas and Louisiana.

W. T. Doherty, Humble Oil & Refining Company, Houston, was chosen as secretary-treasurer for the coming year. He had served during the past year as vice chairman for the Gulf Coast.

Along with the new officers, there were also elected members of the advisory committee. F. C. Sealey, The Texas Company, Houston, was honored by election to the chairmanship of the advisory committee, and John A. Ritter will be on the membership by virtue of his position as chief officer of the district organization.

Other members of the advisory committee selected for the coming year are as follows: R. H. Morrison, The California Company, Dallas; T. E. Swigart, Shell Petroleum Corporation, Houston; E. H. Blum, Atlantic Oil Producing Company, Dallas; M. G. Cheney, Anzac Oil Corporation, Coleman, Texas; J. D. Collett, Collett & O'Keefe, Fort Worth; M. McLaughlin, Magnolia Petroleum Company, Dallas; Charles Fitzgerald, Sinclair Prairie Pipe Line Company of Texas, Fort Worth; James Hutcheson, Rio Bravo Oil Company, Houston; Blaine Johnston, Simms Oil Company, Dallas; Roy B. Jones, Panhandle Refining Company, Wichita Falls; F. Ray McGrew, Standard Pipe Line Company of Louisiana, Shreveport; Underwood Nazro, Gulf Production Company, Houston; A. M. McCorkle, Stanolind Oil & Gas Company, Fort Worth; Charles F. Roeser, Roeser & Pendleton, Fort Worth; M. B. Sweeney, Sun Oil Company, Dallas; B. S. SoRelle, Pure Oil Company, Fort Worth; J. R. Suman, Humble Oil & Refining Company, Houston; W. L. Todd, Columbia Oil & Gas Company, Dallas; and Arch H. Rowan, Rowan Drilling Company, Fort Worth.

Stressing to some extent operating practices in the Gulf Coast region, which is currently the scene of an important exploration and development campaign, the program for the Houston meeting also included papers treating of fields and conditions in other areas as well as some subjects of a general nature affecting oil and gas production activities.

The papers concerning Gulf Coast operations were four in number. One on "Improvements in setting up and dismantling Rotary Rigs," by J. U. Teague, engineer for Humble Oil & Refining Company at Houston, dealt with recent changes of design of drilling equipment and showed how much time is now saved in dismantling a drilling rig, moving to a new location and reassembling.*

Accompanied by motion pictures of some of the recent fires and blowouts in the area, a second paper dealing with Gulf Coast development was that presented on the "History and Development of the Conroe Field," by C. P. Parsons, Halliburton Oil Well Cementing Company, and H. L. Strader, The Texas Company.

The third Gulf Coast paper was "Rotary Drilling Fluid Control in the Gulf Coast," by J. W. Graybeal, Humble Oil & Refining Company, bringing out that field experiments, analyses of drilling operations, and formation pressure surveys have shown advisability of using less viscous rotary drilling fluids than formerly, such substitution giving increased drilling efficiency and greater safety. The paper also stated that progress has been made in overcoming heaving shale, salt water contamination, and loss of returns in circulating drilling muds; and it pointed out requirements of good mud and methods of control.

Paul Hubbard, Gulf Production Company, Houston, was the author of the fourth Gulf Coast paper, his subject being "Deep Drilling in the Gulf Coast." He described equipment especially adapted to the region, and touched upon relatively new equipment, discussing foundations, slush pumps, mud-line manifolds, prime movers, straight-hole precautions, casing programs, blow-out preventers, conditioning of drilling mud, coring, cementing, and use of strainers or screens in the producing formations.

JOHN A. RITTER

Other Papers

Aside from the Gulf Coast papers there was one other dealing with a particular locality, "Recent Developments in Production Practice in Hobbs Field" being the subject of Lloyd Gray, Gypsy Oil Company, and Edwin Wahlstrom, Stanolind Oil & Gas Company. A feature of the paper was the discussion of the latest method for control of gas by packers.

The four other papers on the Houston meeting program were of general nature. D. G. Hawthorne, Barnsdall Oil Company, gave an "Analysis of Bottom Hole Pressure

*See page 13.

Bombs," describing the general construction of different types of bottom hole pressure bombs now in use and how they operate.

H. B. Thomson, Pure Oil Company, had as his subject "The System of Pumping Wells with Pneumatic Cylinders," describing a system which has been developed within the past two years in the Mid-Continent area, consisting of central compressor plants, pipe lines, and pumping cylinders suspended in the derrick of each well. It was stated the system is economical in investment and operating cost.

R. B. Whitehead, Atlantic Oil Producing Company, Dallas, was the author of a paper on the "Value of Paleontology as Applied to Wildcat Drilling." He described the various types of fossil remains of organisms that denote the geologic age of different formations and the methods used for identifying them. Emphasis was placed on the importance of procuring accurate cores, particularly in wildcat wells, and of positively identifying such cores as coming from specific wells to prevent assigning or "salting" such cores to other wells.

B. A. Cunningham, Simms Oil Company, had an interesting subject in dealing with "Acid Treatment of Lime Formations," showing results obtained in Michigan, Kentucky, the Seminole area of Oklahoma, the Zwolle field in North Louisiana, and in the North-Central and Panhandle districts of Texas in connection with the relatively new method of dissolving with acid the limestone formations near the well-bore for increasing oil and gas production. The paper also discussed the chemical reactions involved, the well conditions governing the amount of acid and method of treatment, and compared results with acid treatment and shooting. The conclusion is drawn that the method has demonstrated its value, although most effective in pure lime formations.

Aside from the papers, a feature of the technical program was a motion picture, presented at the Friday evening session, entitled "The Evolution of the Oil Industry," prepared under supervision of the United States Bureau of Mines. The film depicted the development of the petroleum industry from the earliest times, and emphasized the importance of the substance to modern civilization. The early scenes showed the building of Noah's Ark, construction of temples by Zoroaster over petroleum seepages where the "sacred" flames were worshipped, and the burning of petroleum in the sacrificial rites of the Central American Aztecs. Details concerning the drilling of the Drake discovery well were shown along with other scenes portraying early production methods and equipment.

Holmes Urges *Prompt Action on Plan of* "Committee of Fifteen"

Washington, D. C.—Urging prompt action on the program submitted by the "Committee of 15" following the oil conference held by Secretary of the Interior Ickes March 27-29, R. C. Holmes, president of The Texas Company, on April 2 telegraphed to President Roosevelt and members of congress that "at least 95 per cent" of the legitimate industry was represented by the committee.

Holmes recommended adoption of a program calling for "the honest application and enforcement of the federal and state gasoline tax laws on all alike without exception; the enforcement of the conservation laws on all alike without exception; enactment only of such federal and state legislation as will insure this being done as equitably to all interests as is practicable, and that such machinery of government, federal and state, be set up as will provide for the future."

Independent representatives who broke away from the majority, under the leadership of John B. Elliott of California, were attacked in Holmes' telegram, in which he declared that "a part of the press, with misinformation or lack of full information, and a few uninformed, misguided politicians" threatened "to ruin the oil industry and perpetuate a scandal that makes the oil scandals of the Harding administration look like petty graft and larceny."

Illegal production alone is exceeding the total output of a number of states combined, he asserted, adding that "when we find enforcement officers co-conspiring, aiding and abetting the crime, it seems to me that it is time that the legitimate industry be listened to.

"This lawless element, if allowed to operate a little longer, will complete the destruction of the oil industry here and abroad and put the last murderous knife thrusts into the banking situation.

"During these conferences in Washington in the last few days," he said, "the illegal production of oil in Texas and Oklahoma alone exceeded the entire production of the states of New Mexico, Colorado, Wyoming, Montana, Kansas, Illinois, Indiana, Ohio, Michigan, Kentucky, West Virginia, Pennsylvania and New York."

Coincident with publication of the Holmes telegram, there was released from the headquarters of the Independent Petroleum Association Opposed to Monopoly a formal statement in which John B. Elliott, president of the organization, forecast divorcement of oil pipe lines and possibly service stations from oil production, abolishment of the Federal Oil Conservation Board and regulation of pipe line rates by the Interstate Commerce Commission.

"The old oil monopoly has been completely routed at the national capital and its well laid plans to entrench itself in the Roosevelt administration have been signally frustrated," it was declared.

"It is known today that there will be no federal oil czar, no holiday shut-down of oil production, no more Federal Oil Conservation Board, no dictation to the states in favor of the monopoly and, in fact, nothing of their whole program."

Declaring that Holmes' telegram "vividly and strikingly" portrayed some phases of the situation which cannot be paralleled in the record of any other industry, Russell B. Brown, counsel of the Independent Petroleum Association, on April 3 expressed confidence "that President Roosevelt will quickly take all steps necessary to permit the American petroleum industry to stop the ruinous waste of a valuable natural resource which threatens to perpetuate the depression, increase unemployment, multiply bankruptcies and undermine the stability of banking institutions in many oil states.

"The American petroleum industry," he declared, "asks neither loans nor grants from the federal government, but merely such legislation and the inspiration of leadership as will permit it to end the needless and artificial demoralization which has been caused by a comparatively small number and by the misguided policies of others."

Danciger Buys Acre Tracts State Sold in East Texas

Tyler, Texas.—Four completed oil wells on an equal number of adjoining tracts, ranging from 1.12 to 1.57 acres in area, abutting against the north bank of the Sabine River in Gregg County section of the East Texas field, have been purchased by Danciger Oil & Refining Company from S. H. Killingsworth et al. It is reported that the consideration involves $5000 cash and $80,000 additional payable from oil production. These producing tracts are situated on a 15.3-acre vacancy strip owned by the State that was split up into 12 parts when lease award was made last summer by the Land Commissioner to a group of Austin and Longview citizens. Wells have been completed on nine of the leases.

Improvements *In Setting Up and Dismantling* Rotary Rigs

J. U. TEAGUE
Petroleum Engineer, Humble Oil & Refining Company, Houston, Texas

IN recent drilling campaigns more attention has been paid to reducing drilling time per well to a minimum. A large share of this attention has been devoted to methods of reducing the dismantling, moving and assembling time.

Gratifying results have been obtained by arranging the equipment to use the shortest lines and fewest connections possible and by initiating a definite procedure in tearing down, moving and setting up a rig. This plan is the result of experience gained in the East Texas, Thompsons and Conroe fields. The advantage of having a definite plan for this work is obvious, as it makes for better coordination and understanding between various departments involved.

This paper was presented at the Spring Meeting of the Southwestern District American Petroleum Institute, Division of Production, Houston, April 7-8, 1933.

THE intensive drilling campaigns of the past few years, first in East Texas, and now under way in Conroe, have led to much thought and effort toward reducing drilling time and costs. No phase of drilling activities has received a greater share of attention than the operations of dismantling the drilling rig at the completed well, and moving and assembling on the new location. The time required by these operations is non-productive, and in large scale developments, becomes a factor of major importance in drilling costs.

It is the purpose of this paper to discuss briefly more recent changes in the design of drilling equipment, its arrangement on the location, and the procedure of dismantling, moving and re-assembling the rigs, which have resulted in greater speed and lower costs.

Equipment Layout

Figure 1 shows the standard plan adopted by the Humble Oil & Refining Company for the layout of equipment on location in East Texas and Conroe. This arrangement was developed primarily for increased efficiency in the actual drilling. This increased efficiency has been attained by eliminating unnecessary equipment, connections and lines, and has at the same time simplified and shortened the dismantling and assembling of rigs.

The boilers are set with the fire box 150 feet from, and in line with, the side of the derrick opposite the driller and are set at an angle of about 15 degrees with the side of the derrick. In this position, it is possible to lay a steam line from the boiler header straight to the drilling engine, and at the same time prevent the expansion of the line from pushing the riser against the boiler. Also, if one of the boilers, when set at this angle, should blow up, fragments would be less liable to travel toward the derrick. The boiler headers, both steam and water, are welded in one piece. All boiler connections are flanged wherever practical, and expansion in steam lines is taken care of by use of flexible joints instead of conventional swings. The boiler feed pumps, and in most cases the electric generator, are permanently mounted on a welded steel skid made of 4-inch pipe so it can be moved as a unit. With this hookup, the water and

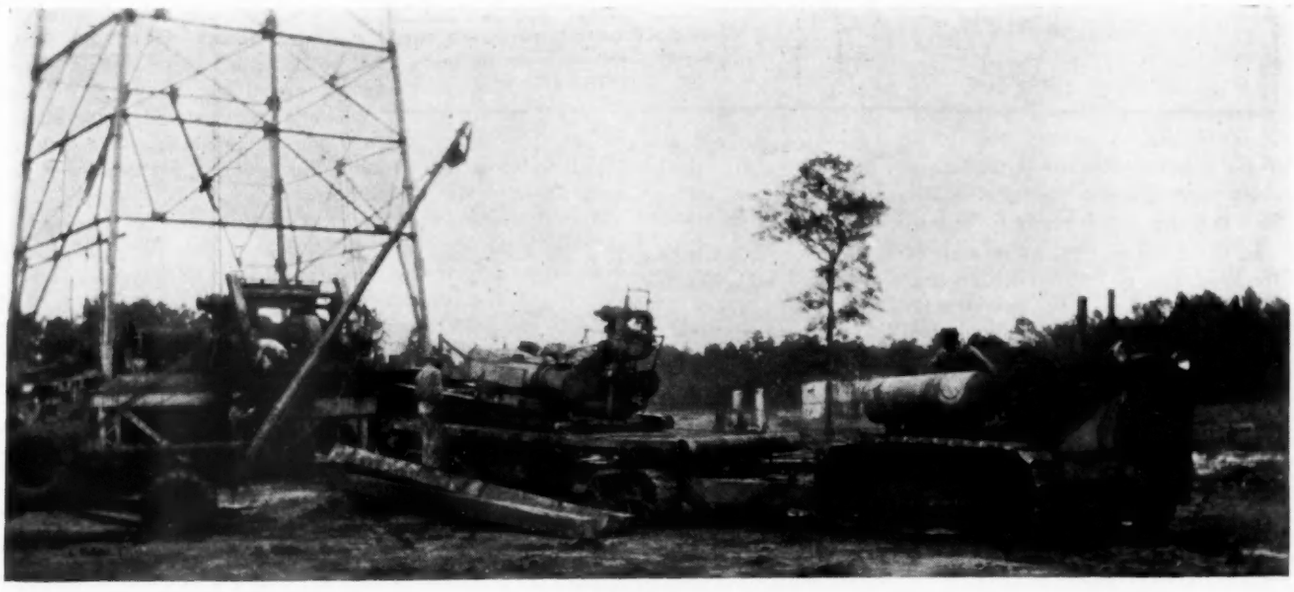
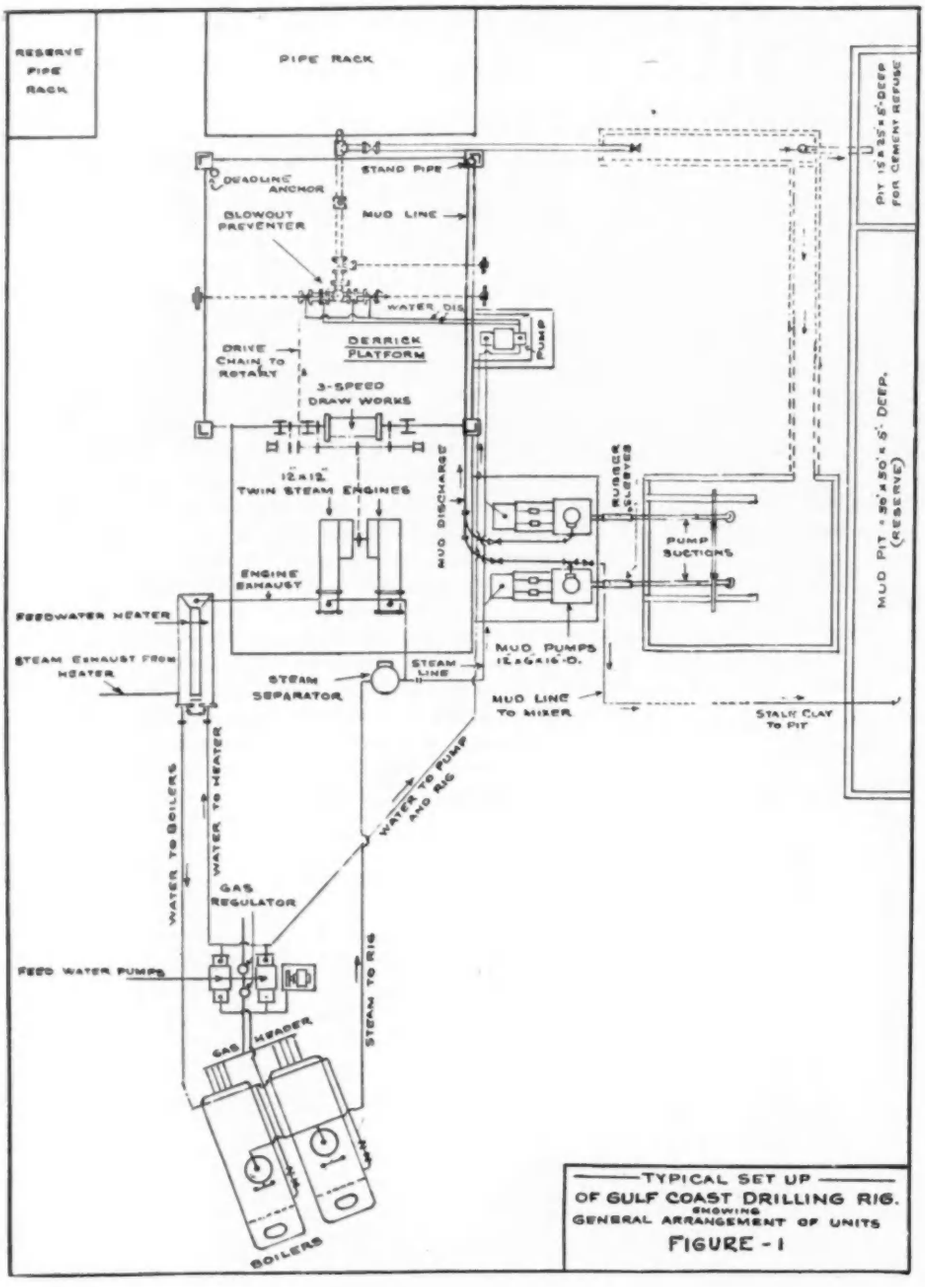


FIGURE 2
Unloading drilling engine from steel sub-structure. Also view of crane truck and portable type drawworks.



TYPICAL SET UP OF GULF COAST DRILLING RIG. SHOWING GENERAL ARRANGEMENT OF UNITS

FIGURE - 1

steam manifolds of the pumps do not have to be disturbed when tearing down. Simply unflange the steam and water lines and the unit is ready to be moved to the next location.

In the Conroe area, as in most coastal fields where high pressure gas is encountered, general practice is to build the derrick on a steel sub-structure to provide space to install the well control equipment. When this sub-structure is used it is not necessary to dig a cellar. Control devices are in a much more accessible place than if a cellar were used.

Where sub-structures are used it is necessary to provide a foundation of the same height for the drilling engine. This has been accomplished by a special structure made of steel beams bolted together. The drilling engine is easily loaded on or off this foundation from the trucks and the foundation can be moved as one piece. By running tie rods from the derrick corners to the back of the foundation, the engine and foundation can be quickly and securely tied to the derrick. This is a faster and more satisfactory arrangement than making a dirt fill for the engine foundation.

Figure 2 shows the engine being unloaded from the steel substructure onto an Athey caterpillar wagon, and Figure 4 gives a clearer view of the engine mounted on the substructure.

Another important change has beeen in slush-pump hook-up. The conventional mud manifold consisting of an assortment of valves, ells and tees has been replaced by the simple arrangement shown in Figure 1. They are only four easy bends between the pump and the mud hose. The manifold, mud line and standpipe consist of five pieces, all of which have flanged connections. This compact and simple arrangement is made possible by use of a section of rubber tubing in the pump suction for flexibility instead of the ordinary half swing. This permits the pumps to be set side by side and eliminates one 90 degree turn in the suction, providing greater efficiency with less equipment.

Special Designed Equipment

The only change in drilling equipment design primarily intended to increase the portability is seen in the new "A" frame, or unit drawworks. Figure 4 gives a close up view of this new arrangement and Figure 2 shows it ready to be moved from a well in the Conroe field. No head board is necessary with this drawworks. Drum, jack shaft and line shaft are all built into one unit. This saves the time required to dismantle and rig up the drawworks as it is all moved as a unit. In actual test, use of this drawworks has reduced the dismantling and assembling time eight to 10 hours below that required for ordinary drawworks of the same size and under similar conditions.

Actual operation of the drawworks compares very favorably with the regular type of drawworks. The "A" frame drawworks referred to was designed by Mr. Hu M. Harris, Humble Oil & Refining Company, Houston, Texas, and several of the larger manufacturers of drilling equipment are contemplating placing units of similar design on the market.

Dismantling Rig

A definite procedure has been developed for dismantling a rig from the experience gained in East Texas and Conroe drilling campaigns. The aim of this procedure is to dismantle each piece of equipment as soon as possible, place it in a designated place convenient for loading and at the same time out of the way. The general arrangement of the dismantled equipment according to this plan is shown in Figure 5.

It is a general practice in the Conroe area to complete

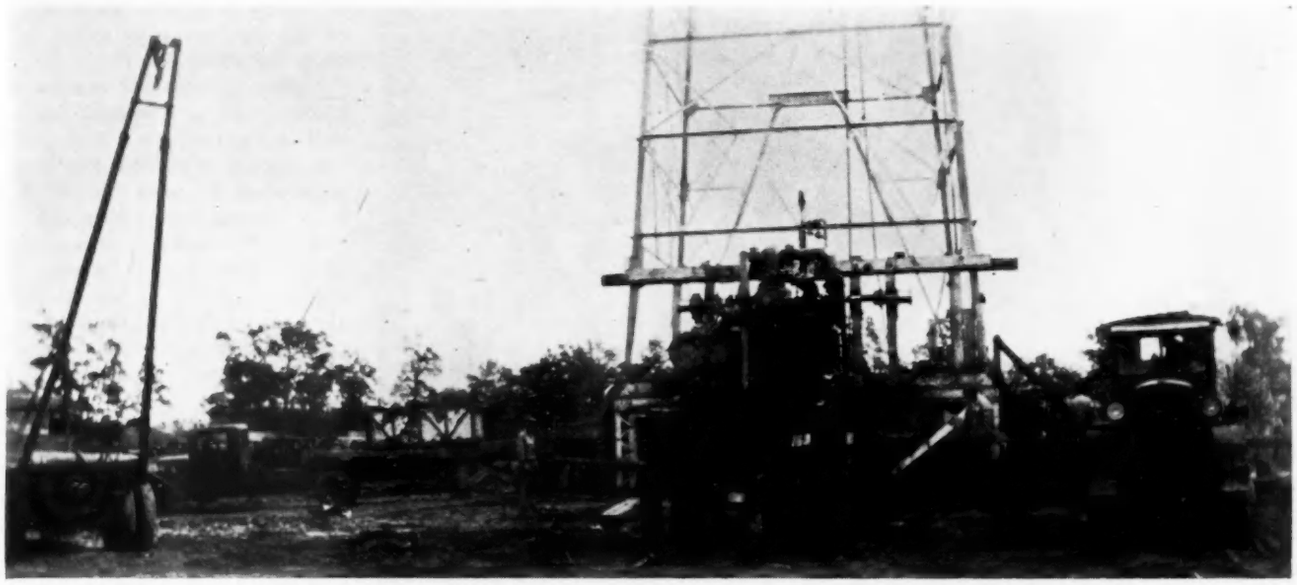


FIGURE 3
View of steel box used in moving drawworks parts (on truck). Also shows engine mounted on steel foundation.

the wells by washing, and the dismantling operations are begun at this point. The derrick is stripped of all its equipment, the traveling block unstrung, and the crown block taken down, and each piece of equipment is placed in its assigned position as it is dismantled.

By the time the derrick has been stripped and the blocks unstrung, the well has been washed and is either in or waiting to be swabbed. If it is necessary to use a swab, a portable swab reel powered by a small, twin-cylinder steam engine is moved on the floor. A heavy type single-sheave snatch block is attached to the gin pole to serve as a crown block. The use of this portable swabbing machine to swab a well instead of changing lines on the drawworks drum, saves about eight hours time.

Stripping the derrick and unstringing the blocks while washing the well enables the fires in the boilers to be cut out as soon as the well comes in as there is no further need for team. This reduces the total time required to dismantle a rig by four to six hours from the old method of waiting until the well was in before stripping the derrick and unstringing.

As soon as the fires in the boilers are cut out, a crew starts dismantling the boilers as they are the first pieces of equipment required at the new location. A crane truck is essential for handling the heavier pieces if it is hoped to attain any speed in dismantling the boilers or the rest of the rig. The crane truck places the steam header, water header, and all the piping in a rack built especially for this purpose. Use of this rack as a container for the large boiler connections assures their not being separated or damaged in transit. A small steel box has been built for moving the small connections in, such as gauges, burner parts, etc. Both of these special pieces of equipment have proved very practical and convenient, and are shown with the boilers in Figure 5.

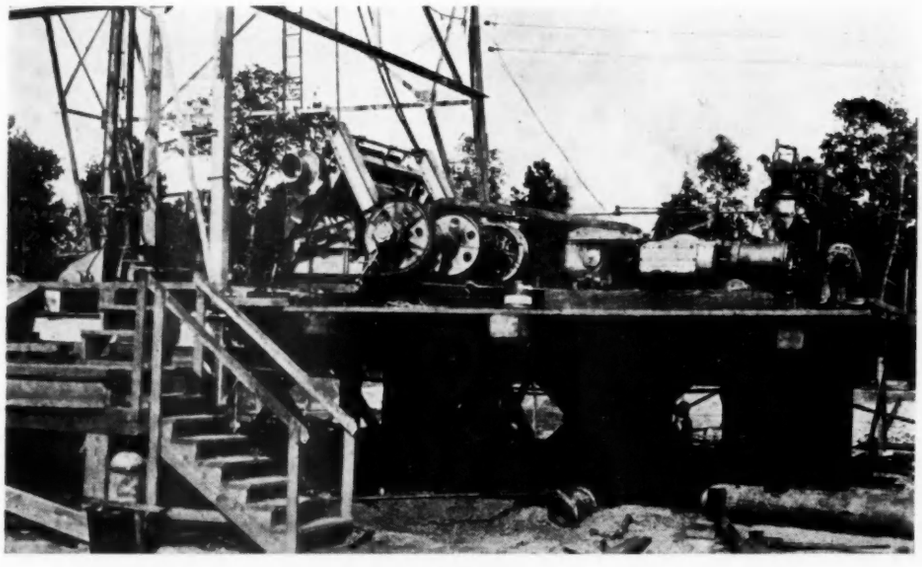


FIGURE 4
Portable Type Drawworks. (Note how engine foundation is tied to derrick corners.)

If more than one crew is available, the extra crews disconnect the slush pump and take down the chain guards, rotary chain guards, rotary chains and light drawworks braces while the boilers are being dismantled. As soon as the crane truck is available from the boilers, the engine platform is torn up and the timbers stacked away from the derrick with the chain guards and braces. The steam and mud line connections of the slush pump are next stacked along beside the slush pit where they are kept together until ready to move.

If enough crews are available the drawworks are dismantled simultaneously with the slush pumps. Before the drawworks are dismantled the engine and its foundation are pulled about 30 feet (Figure 6) from the derrick

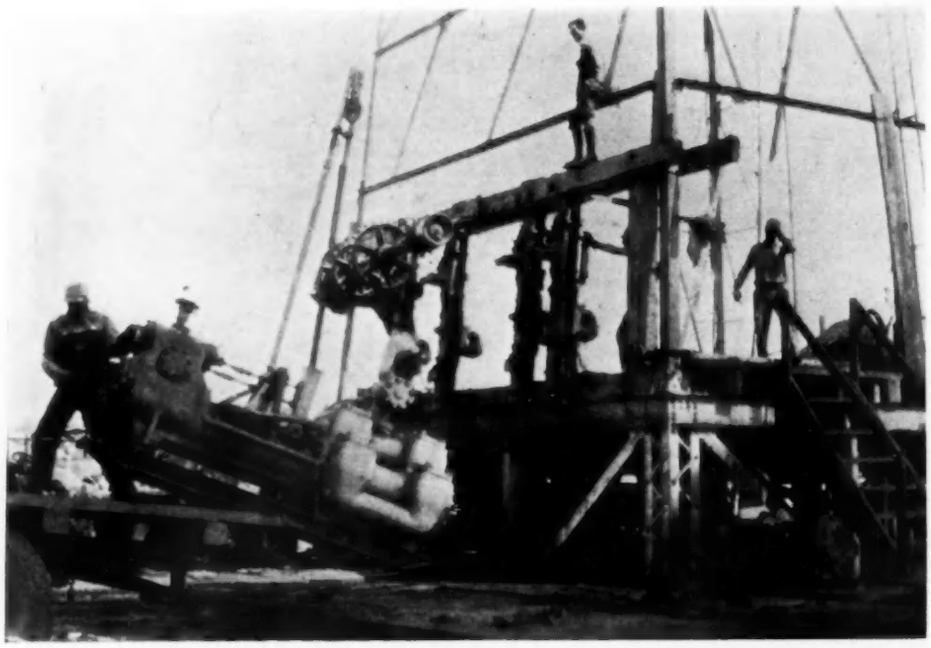


FIGURE 6

Dismantling operations on a Conroe well. Crane truck is lowering line shaft. The engine foundation can be seen at extreme left where it has been pulled away from derrick.

so the crane truck can get in to handle the heavy drawworks parts.

The crane truck is used to handle the drum, line shaft, head board and jack posts. The drum is rolled out of the boxes on to its skid. The line shaft, jack post and head board are taken down and either loaded directly on a truck, or laid on the ground at the edge of the derrick to be picked up when needed.

Figure 6 shows a crane truck taking down a line shaft on a well in Conroe.

A special steel box has been constructed to move all of the bolts, bearing caps, rotary chains and small detachable drawworks pieces. This box is placed in either the center of the derrick floor, or on the loading dock beside the derrick floor to be convenient when dismantling the drawworks.

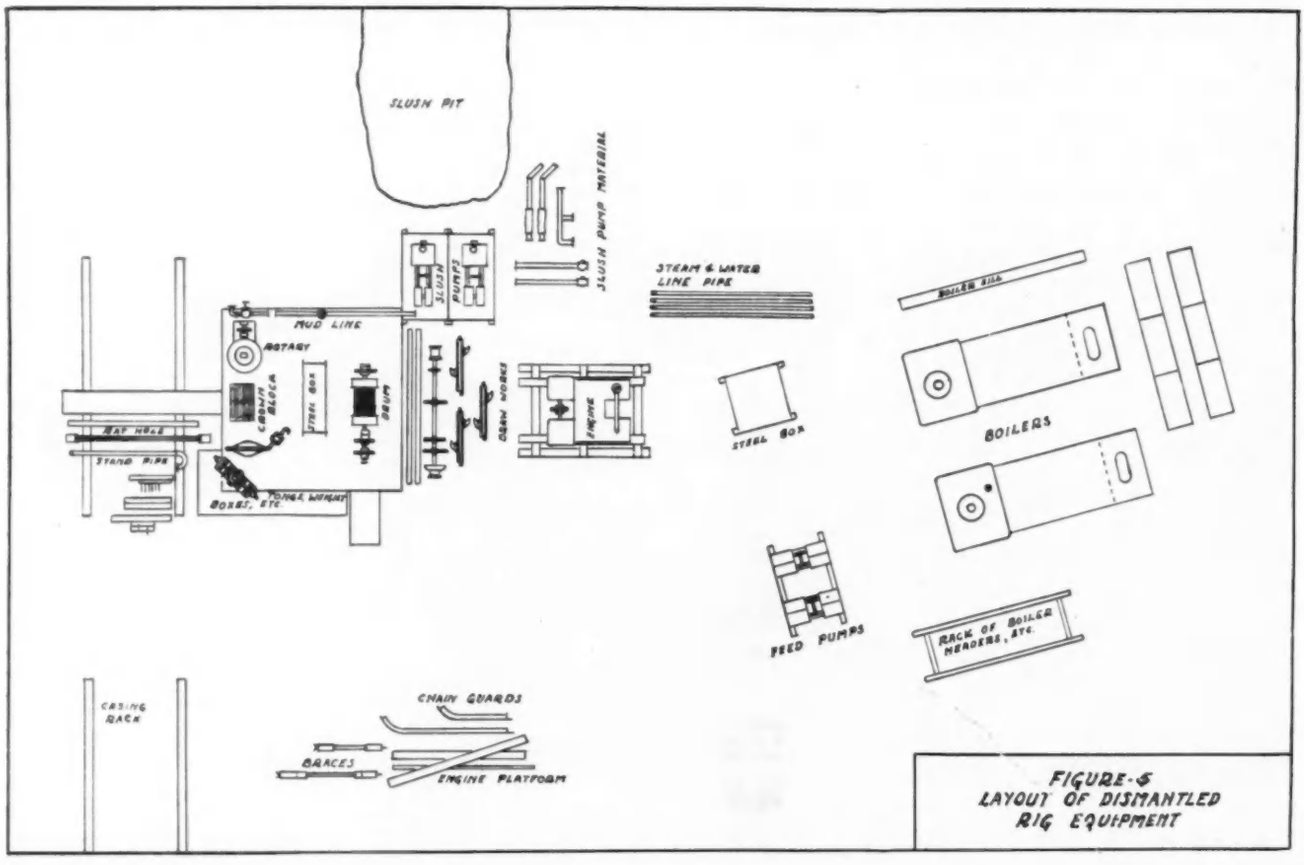
A view of the box loaded on a truck is shown in Figure 3.

The rig is now completely dismantled and ready to be moved. If nothing has been moved during the dismantling operations, the equipment on the location should appear very much like Figure 5.

Transportation

Transportation is the key of efficient rig moves. Upon it depends moving the proper equipment from the old to the new location with the minimum amount of elapsed time and without damage.

The first step toward efficient transportation is the planning of the loads and in what order they are to be carried. The rigs used in the Conroe area ordinarily consist of two 100 horsepower boilers and two 12-inch by 16-inch by 16-



Moving Schedule for Heavy Duty Rigs

60 Caterpillar No. 1	60 Caterpillar No. 2	1½-ton Float Truck No. 1	1½-ton Float Truck No. 2 with Winch	1½-ton Float Truck No. 3	1½-ton Trailer Truck	3½ or 5-ton Truck
1. Boiler (100 Hp) (27,000 lbs.)	Boiler 100 HP (27,000 lbs.)	Boiler feed pumps, box of connections. All other boiler material that can be carried (3500-4000 lbs.)	Rack containing boiler manifolds (3000-3500 lbs.)	Pump suction all slush pump connections (3500-4000 lbs.)	Boiler stacks, pipe and sill (2700-3000 lbs.)	Drum with drilling line (9500-11000 lbs.)
2. Twin engine and steel foundation (24,000 lbs.)	Crown traveling Block, hook, swivel, and Rotary (25,000 lbs.)	Headboard, Lineshaft, jack posts (6500-8000 lbs.)	Box of material off derrick floor (4000 lbs.) (4500 lbs.)	Braces, chain guards, water heater (3000-3500 lbs.)	Pipe from steam and water lines (3150 lbs.)	Steam driven slush pump (8200-11,000 lbs.)
3.		Thribble board, line guide, fingerboard, etc. (2000-2500 lbs.)	Oil barrel rack and surplus material at tool house (2500-3000 lbs.)	Mud jets and other remaining material (2500-3000 lbs.)	Engine platform timber, steps and tool bench (4000 lbs.)	Steam driven slush pump (8200-11000 lbs.)
4.					Kelly, rat-hole, stand-pipe, rotary hose (7000 lbs.)	Steel tool house (3200 lbs.)
5.						100-barrel water tank (1700 lbs.)

inch pumps and a heavy duty type drawworks. These rigs require about 22 loads to move, using a minimum of heavy trucking equipment.

The order of moving the equipment should, of course, be in the same order it is set up at the new location. The customary procedure is to begin with the boilers, then the slush pumps, and last the drawworks. For this procedure the attached schedule was worked out.

When using this schedule the rig is moved in units. For example: when the boilers are moved all the necessary connections for rigging up the boilers are moved at the same time. If the transportation is not sent to the location to move a rig until the boilers are completely dismantled, the material can be moved in exact accordance with this schedule. If, however, as often occurs in practice, something comes up to disrupt the schedule, the trucks can take one of the last loads scheduled for it instead of the proper one. These last loads are made up of material which can be moved at any time without interfering with the rigging up operations. Having these loads to fall back on will eliminate a congestion of transportation at the old location if something prevents a major item of equipment from being dismantled in the scheduled time. It will be noted that nearly all of the loads shown in the schedule are segregated when the rig is dismantled and the equipment placed according to the layout shown in Figure 5.

Minimum transportation facilities required for this schedule are:

Two—60 or 65-ton caterpillars with 15-ton Athey wagons, or trucks for moving boilers.
One—3½ or five-ton bob-tail truck, preferably five-ton.
Three—1½-ton trucks with trailers and floors; Maximum capacity 9000 pounds.
One—1½-ton trucks with trailers.

Less than this number of trucks will hardly move the equipment as fast as needed, and if many more are used, there is apt to be confusion at both locations, loading and unloading. However, as many as eight trucks have been used with this schedule successfully. In fact, a little greater speed can be attained by using two 3½ or five-ton trucks instead of one, for handling the loads shown in the last column of the moving schedule.

Under ordinary weather conditions and on moves up to one mile, a complete rig can be moved in ten to 12 hours, using the pieces of equipment listed above.

Crane Trucks

Crane trucks used in a rig move were not listed in the above group as their use is confined more to the dismantling and rigging up operations than to actual transportation. The use of crane trucks has perhaps speeded up these operations more than any other single piece of equipment. There are several designs of booms used on crane trucks but the most used is the type shown in Figures 2 and 3. This arrangement is light, strong and efficient, and has the decided advantage of being demountable. When there is no crane work to be done the boom can be taken off and the truck is available for regular service. Some types of cranes are mounted permanently on the truck, which renders the truck useless for any work other than crane work.

It is imperative, if the maximum speed is to be attained on rig moves, that at least two cranes be used on each move. Both cranes can be used to advantage at the old location in the first stages of dismantling the rig. When the first equipment leaves the old location for the new, one of the cranes should go to the new location to help unload the trucks and set up the equipment as it arrives.

Several special pieces of equipment have been developed to assist in rig moving which have proved very convenient. The chief of these are:

The rack for boilerheaders and connections: This rack is built on a skid made of 18-foot pieces of four-inch pipe welded together with two-inch cross members four inches long and floored with junk 12-gauge tank steel tank staves. The sides are made by welding two-inch pipe 3½ feet long at intervals of three feet and cross bracing these standards with old tank rafters or sections of two-inch pipe.

The steel boxes: One box was built for the small drawworks parts and the other for the small boiler parts, having dimensions of eight feet by 4½ feet by three feet and four feet by 4½ feet by three feet respectively. The frames of these boxes are built identical with the boiler manifold rack, except that the sides as well as the bottom are covered with 12-gauge steel taken from junk tank staves.

Some operators use a large rack similar to the boiler

manifold rack but made of heavier material to contain the swivel, traveling block, crown block, chain guards, rotary chains, etc. This is especially convenient where the material is moved on a caterpillar wagon as it saves loading and unloading each piece of equipment separately.

In Conroe, it has been necessary to move a number of rigs at night. For this work a small 110-volt gasoline-driven electric-light plant was mounted on a light steel frame with four 500-watt flood lights mounted on top. Hooks are welded to the frame so the plant can be handled with the crane truck to set it on and off a truck. One of these plants furnishes ample light for one location.

In fields where wells are completed about every 30 days, one set of the above special equipment to every eight rigs should be sufficient.

Rigging Up

Where the number of operations are sufficient, a special crew is assigned the duty of preparing the locations for moving in the drilling rigs. This preparation includes building the mud ditch, boxing in the cellar and leveling off for the engine and pump foundation. Having this work done before the rig is moved in allows the drilling crew to devote their time entirely to rigging up.

As stated before, the most efficient method of moving a rig to speed up the rigging up operations is to move it in units and in the order it is to be set up. This is accomplished by moving the equipment according to the schedule and placing on the new location according to Figure 5, in the same position as it was placed when dismantled.

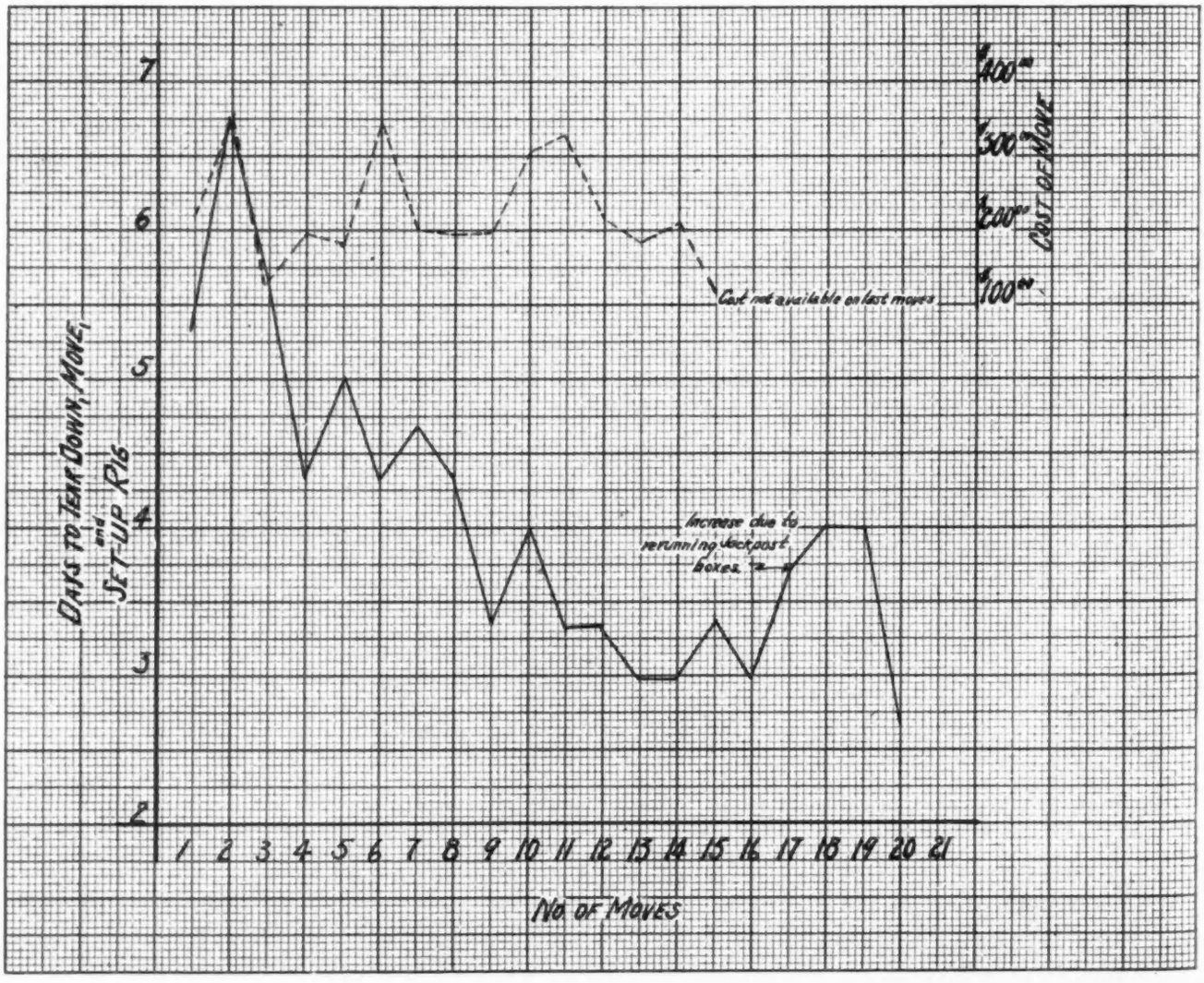
The order of rigging up is practically the same as dismantling; the boilers first, the slush pumps next, and the drawworks last. The equipment as it arrives on the location is taken off the trucks and set up if possible. If the equipment arrives before it can be used, it is unloaded in accordance with Figure 5; that is, in the same position as it was picked up at the old location.

All the setting up operations are, of course, assisted by crane trucks. Fair speed can be obtained using only one crane, but for the first day of setting up two cranes can be used to advantage, one for handling material in setting up, and the other to help unload the trucks as they arrive and place the material in its proper position.

Results

The efficiency of this system of dismantling, moving, and setting up is shown by the following curve. This curve shows the time required to tear down, move and set up 20 consecutive rigs in the Conroe area. The first five of these moves were made before the above methods were put into effect. The reduction in time effected by this schedule was from an average of 5.4 days for the first five moves to an average of 3.33 days for the last eight moves.

Besides effecting this saving in time the cost of moving a rig, according to this schedule, is not appreciably greater than before it was used. According to the curve, the average cost of 15 moves was $230.00 each, which includes moving the machinery and drill pipe.



Discussion of Drill Pipe Stresses

MURRAY PUTNAM
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ABSTRACT

FOLLOWING an analytical discussion of the various stresses to which drill pipe is subjected the conclusion is reached that normal drilling strings are amply strong to resist failure from all stresses that reasonably may be encountered, save bending. It is concluded that flexure of the compressed portion of a drilling string into cavities of even moderate dimensions most reasonably explains the majority of drill pipe failures not directly occasioned by such causes as actual pipe flaws or damaged threads.

No practical way to completely eliminate failures opposite a cavity is proposed, but use of a high yield point steel in the drill pipe immediately above the drill collar, or oversize pipe used for stiffening, should considerably reduce the number of failures from this cause.

The installation of a number of special instruments for recording modern rotary drilling practice has made possible an analysis of our present methods.

These instruments record such data as drilling weight employed, applied torque, rotary table speed, and footage drilled. The data secured also permit of at least an elementary analysis of the various stresses to which drill pipe is subjected. The six principal types of stress are discussed below in some detail. The stress problem, however, is so involved that a discussion, at this time, is not offered of the minor stresses set up in a drilling string, nor does it seem advisable to attempt to analyze the effect of combined stresses. It is, of course, realized that ignoring this latter point casts a certain doubt upon the validity of the conclusions reached, but our experience has indicated that, for the time being at least, we can safely neglect this question.

This paper was prepared for presentation at the Spring Meeting, Pacific Coast Section, American Petroleum Institute, Division of Production, Los Angeles, April 6, 1933.

1. *Tension.*

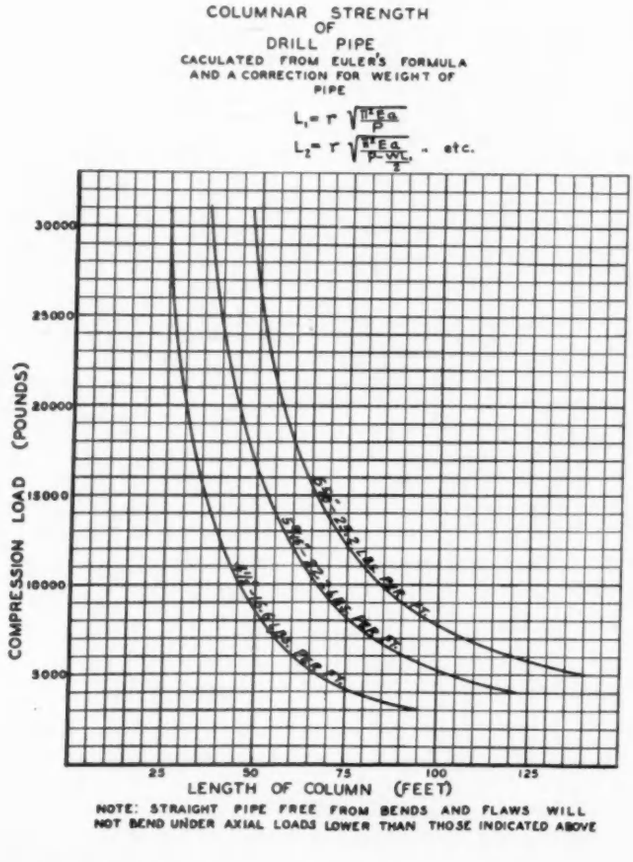
Drill pipe hanging in the hole, with the bit off bottom, is due to its own weight entirely in tension, the stress increasing from practically zero at the bit to a maximum at the top. Maximum tensile stress usually occurs while attempting to free stuck drill pipe. The following table gives maximum allowable pulls for Grades "C" and "D" pipe. Data are based on the specified minimum A. P. I. Yield Points. It is assumed that the pull-out strength of tool joints and couplings is equal to the strength of the pipe.

TABLE I

Drill Pipe Pounds Per Ft.	Maximum Allowable Grade "C"	Pull-Pounds Grade "D"
6⅝"—25.2	293,000	358,000
5-9/16"—22.2	259,000	316,000
4½"—16.6	198,000	242,000
3½"—13.3	163,000	198,000

These values are calculated without inclusion of a safety factor. In operation allowable pulls should be restricted to a somewhat lower figure, except in emergency, and of course consideration should be given the possibility of exceeding the allowable load per single wire line.

FIG. 1



2. *Compression.*

When the bit is lowered to bottom the stress in the lower end of the string changes to compression, with the maximum intensity at the bit. The intensity decreases upward until a neutral point of neither tensile nor compressive stresses is reached. Above this point the pipe is in tension with the maximum intensity at the top of the string. Since compression loads are generally less than 15 per cent of the average tensile

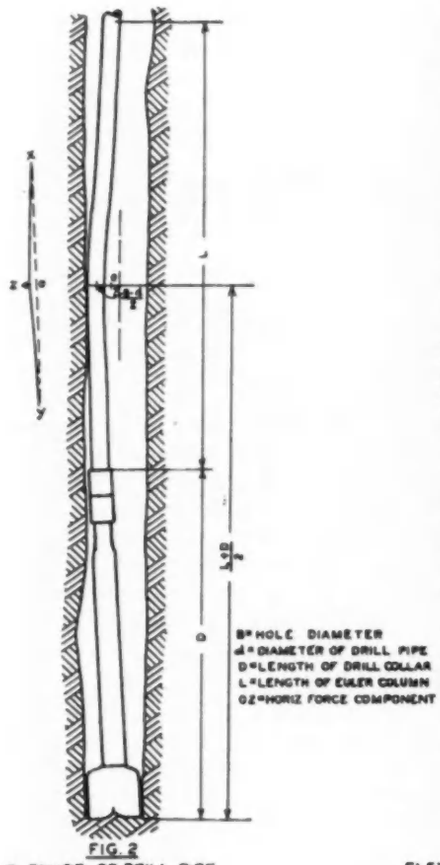


FIG. 2
FLEXURE OF DRILL PIPE
IN NORMAL HOLE
MEDIUM DRILLING WT

FIG. 3
FLEXURE OF DRILL PIPE
IN NORMAL HOLE
HIGH DRILLING WEIGHT

loads, they appear of minor importance in the study of drill pipe failures, except as they affect flexure.

3. *Flexure.*

If the drilling weight is kept very low, the pipe will remain rigid, and the danger of drill pipe failure and crooked hole is practically eliminated. However, these weights are generally too low for economical drilling progress, and are not ordinarily used. As a result, drill pipe is nearly always flexed during drilling, and this is probably the most important factor affecting drill pipe failures and crooked hole.

The load under which drill pipe will flex can be calculated with reasonable accuracy by Euler's well known "long column" formula. The columnar strength of drill pipe so computed is shown in Figure 1.

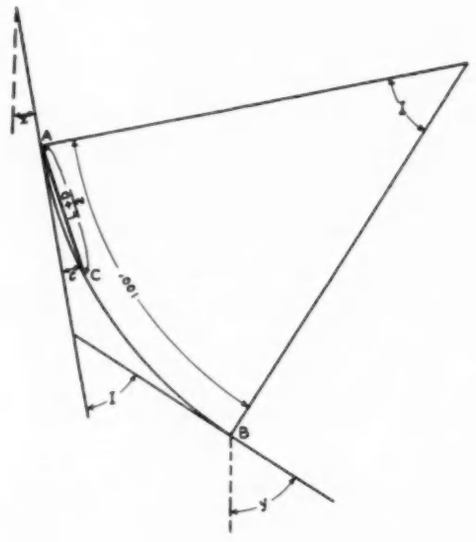
Column lengths shown include a correction for the difference in axial loading at the top and bottom of the column, due to the weight of the pipe. The data in Figure 1 form the base from which can be calculated the straight hole characteristics of any drilling string. Several assumptions were necessarily used in the preparation of these and the following data, but the general accuracy of the anlytical method is well proven by close agreement between calculated values and field measurements in formations that do not cave readily.

Figure 2 illustrates the flexure of a drilling string in normal hole under common drilling weights. "L" is the shortest Euler column that will fail to support the compression load at the top of the drill collar. This distance varies with the drilling weight and the size of the drill pipe. The quality of steel has practically no effect on it. If the length of the drill collar is "D" feet, the point where the pipe touches the wall will be approximately $\frac{L+D}{2}$ feet above the bit. The drill collar will lie over at an angle depending on the distance $\frac{L+D}{2}$ and the difference in diameters of the hole (B) and the drill pipe (d).

If the drilling weight increases, the distance "L" decreases, and the drill collar will lie over at a sharper angle, as shown in Figure 3. If "L" is equal to, or less than "D", the point of contact will fall at the top of the drill collar, or oversize pipe used for stiffening.

Knowing values of $\frac{L+D}{2}$, and the diameters of the hole and drill pipe, the angle between the drill collar and the axis of the hole can be calculated for various drilling weights. If the point of wall contact remains on the same side of the hole, the bit will drill in a curve, with the inclination gradually increasing with depth. For convenience, the drill collar angle is converted to show the increase in inclination per hundred feet of hole drilled. The method is illustrated in Figure 4.

FIG. 4
INCREASE IN INCLINATION PER HUNDRED FEET DRILLED



$$I = \frac{y - x}{I = \frac{c}{0.6\,(L+D)}} \quad \text{APPROX.}$$

WHEN C = ANGLE BETWEEN AXIS OF HOLE AND AXIS OF DRILL PIPE COLLAR (IN MINUTES OF ARC)
L = LENGTH OF EULER COLUMN (IN FEET)
D = LENGTH OF THE DRILL COLLAR (IN FEET)
I = INCREASE IN INCLINATION PER HUNDRED FEET (IN DEGREES)

"A—C" represents the distance $\frac{L+D}{2}$, and "c" the angle between the axis of the hole, and the axis of the drill collar. "X" is the initial inclination of the hole, and "Y" the inclination after drilling 100 feet. "I" will therefore be the increase in inclination per 100 feet.

$$Y - X = I = \frac{c}{0.6\,(L+D)} \text{ (approximately)}$$

Where I is expressed in degrees,
c in minutes of arc
L, D in feet.

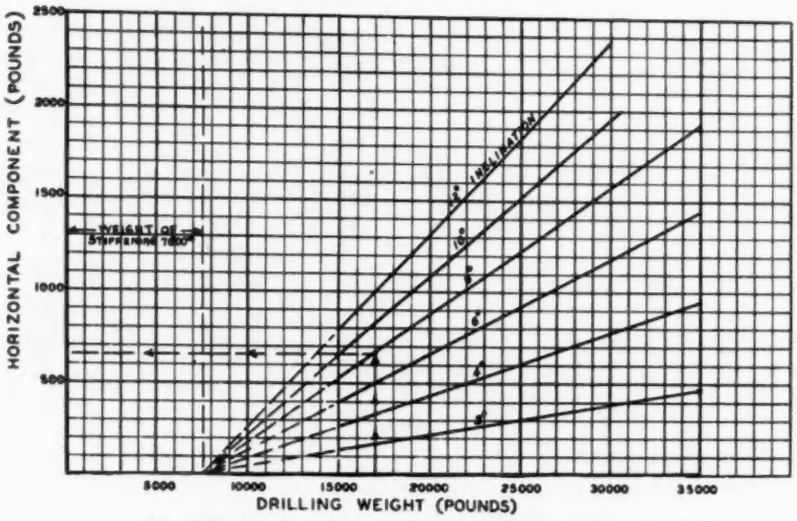
This relationship holds only provided the point of wall contact remains continuously on the same side of the hole. The forces tending to hold the point of contact on the low side of the hole are illustrated in Figure 2. The force

"X O" is acting perpendicularly downward due to gravity. The reacting force "Y O" is acting upward through the drill collar. These produce a small resultant force "O Z", tending to keep the point of contact on the low side of the hole. "O Z" will vary in magnitude with the inclination of the hole and the drilling weight used. Field experience indicates that if a hole is inclined less than three degrees it tends to remain straight, but if chance carries the inclination over approximately three degrees, the deviation increases at a rapid rate.

The value of the horizontal component for certain strings is shown in Figure 5, from which it is apparent that unless this component exceeds 100-350 pounds, the drill pipe will not remain on the low side of the hole but will work around. The bit will then dig a straighter hole than is indicated by calculation.

The value of "I" in Figure 4 is also dependent upon the gauge of the hole. If the point of wall contact falls opposite a cave, the drill pipe will lie over at a greater angle than it would in a normal hole, as is illustrated in Figure 6. The rate of increase in inclination will depend in this case on the size and position of the cave, as well as the drilling weight and the type of drill collar.

FIG. 5
HORIZONTAL COMPONENT
(PRESSURE HOLDING PIPE ON LOW SIDE OF HOLE)
STIFFENED DRILLING STRINGS
ASSUMED WEIGHT OF STIFFENING 7600 LBS.



EXAMPLE ASSUME 17,000 LBS. ON THE BIT IN 8" HOLE, START AT 17,000 LBS ON HORIZONTAL SCALE MOVE VERTICALLY TO 8°, THENCE LEFT TO 650 LBS. ON VERTICAL SCALE.

Stress calculations indicate that the existence of cavities opposite the compressed portion of a drilling string is logical explanation for a large percentage of drill pipe failures that are not directly due to flaws, damaged threads, etc. These stresses can be calculated in two ways—

(1) The bending moment method, and
(2) The elastic curve method.

The Bending Moment Method

If drill pipe is held in flexure by a compression load, the bending moment at any point is the product of the compression load at that point and the distance from the center of the hole to the center of the drill pipe at that point. If the pipe is flexed into a cavity, the maximum bending moment will occur at the point farthest from the center of the hole, and is denoted by Py in Figure 6, where "P" is the compression load at the cavity and "y" is the distance from the center of the hole to the center of the drill pipe which is

$$\frac{1}{2}\ (B - d)$$

where "B" is the diameter of the hole and "d" is the diameter of the drill pipe.

This bending moment will be resisted by the pipe, and the resultant maximum tensile stress may be computed by the Flexure formula:

$$Py = M = \frac{SI}{C}$$

Where M is the bending moment
I is the moment of inertia of the pipe
C is the radius of the pipe
S is the unit tensile stress.

Since "I" and "C" are constant, the stress will vary with "P", the compression load, and "y", the depth of the cavity.

This relationship suggests two reasons why drill pipe failures usually occur at the top of the drill collar, or stiffening.

First: The compression load is greater here than at any other point in the string.

Second: This is the first part of the pipe to fall opposite a cavity, after it has been washed out at the bit.

Figure 8 shows the values of "P" and "y" which

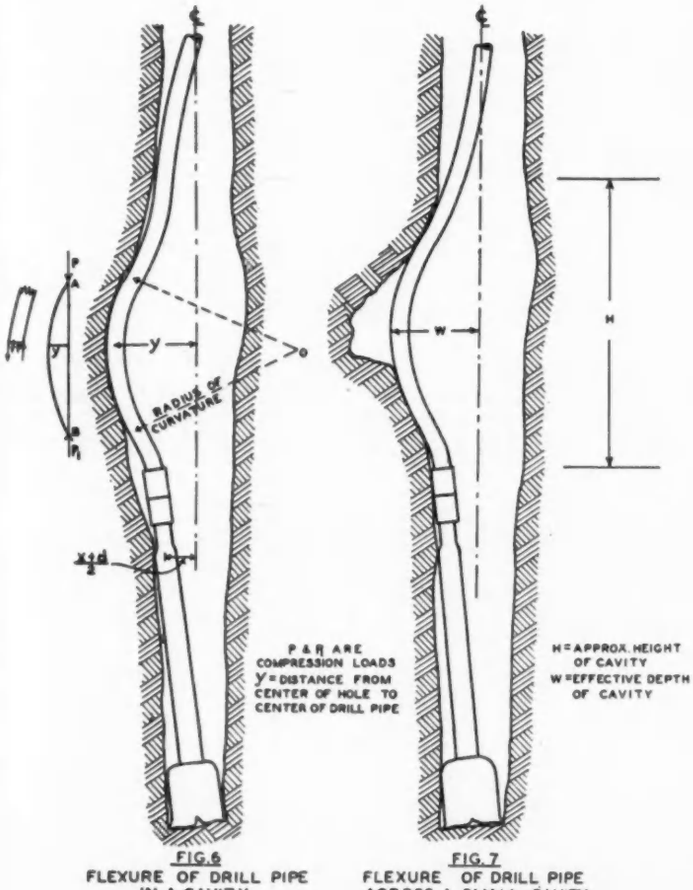
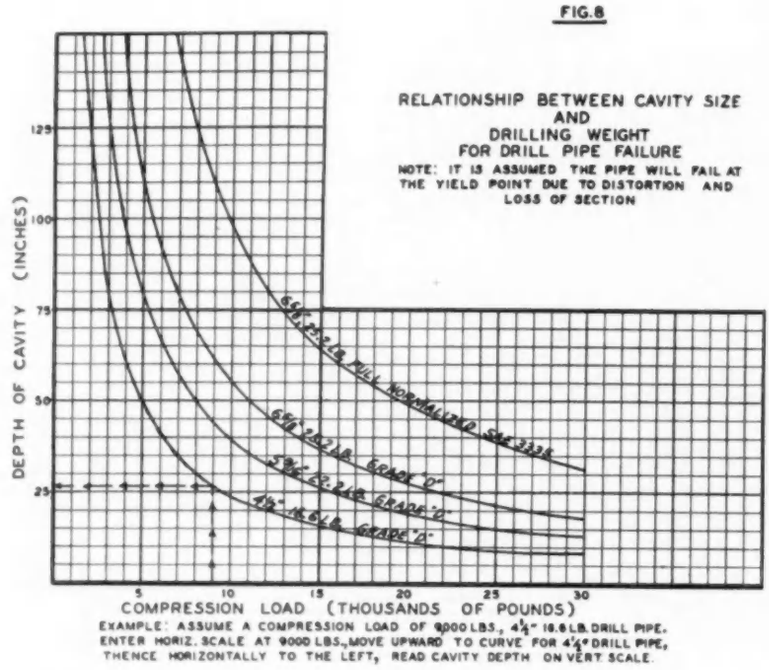


FIG. 6
FLEXURE OF DRILL PIPE IN A CAVITY

FIG. 7
FLEXURE OF DRILL PIPE ACROSS A SMALL CAVITY

FIG.8


RELATIONSHIP BETWEEN CAVITY SIZE AND DRILLING WEIGHT FOR DRILL PIPE FAILURE
NOTE: IT IS ASSUMED THE PIPE WILL FAIL AT THE YIELD POINT DUE TO DISTORTION AND LOSS OF SECTION
DEPTH OF CAVITY (INCHES)
COMPRESSION LOAD (THOUSANDS OF POUNDS)
EXAMPLE: ASSUME A COMPRESSION LOAD OF 9000 LBS., 4½" 16.6 LB. DRILL PIPE. ENTER HORIZ. SCALE AT 9000 LBS., MOVE UPWARD TO CURVE FOR 4½" DRILL PIPE, THENCE HORIZONTALLY TO THE LEFT, READ CAVITY DEPTH ON VERT. SCALE.

create stresses equal to the Yield Point of Grade "D" steel. It is assumed that failure will begin at the yield point due to distortion and loss of section.

Example—(referring to Figure 8)

Assume 11,000 pounds on the bit with 4½-inch Grade "D" drill pipe and a 4½-inch by 30-foot drill collar—

Drilling Weight	11,000 Pounds
Drill Collar	2,000 Pounds
Compression load "P"	9,000 Pounds

With 9000 pounds opposite a cavity, the yield point of Grade "D" steel is reached with a cavity 25 inches deep, and failure will doubtless occur with continued rotation.

The Radius of Curvature Method

Drill pipe loaded beyond its column strength will seek support from the walls of the hole. If a cavity is encountered which causes the pipe to bend too sharply, it will fail regardless of the width of the cavity and the drilling weight used. Failure will occur when the radius of curvature, (See Figure 6), becomes less than the following:

TABLE II
Minimum Radii of Curvature

Size of Drill Pipe (Inches)	Grade "C" (Feet)	Grade "D" (Feet)	"Special" Steel* (Feet)
6⅝	184	150	83
5-9/16	155	125	70
4½	125	100	56

*100,000 pounds per square inch yield point.

Figure 9, Curve "A", gives dimensions of cavities that will give radii of 150 feet, the minimum for 6⅝ inch, Grade "D" pipe. The shape of the cavity, however, affects the possibility of failure. Pipe will bridge small cavities, (See Figure 7), and may not necessarily fail. It is difficult to estimate accurately the size of a cavity that drill pipe will bridge, but a rough approximation is shown by Curve "B", Figure 9.

It should be noted that failure of this type can occur with any drilling weight over that required to flex the pipe.

Comparison of Methods

It is probable that failures occur most frequently according to the first method described; that is, with average drilling weights in caving ground. Either method shows that drill pipe failures can occur under otherwise normal conditions, regardless of the care taken by the driller.

4. *Torsion.*

Rotating drill pipe is subject to a torsional shear, the amount of which depends on the size of the drilling engine, the steam pressure, and the mechanical advantage from engine to table. Excluding flaws in the drill pipe, present day drilling equipment does not have sufficient power to cause failure from pure torsion, except with maximum steam pressure on the smaller pipes. Table III shows torsional safety factors with a 12 x 12-inch engine, the usual and maximum manifold steam pressures, and a commonly used gear ratio, 2.25 : 1.

TABLE III

Pipe Inches	Average Safety Factor Operating Unit Shear (Lbs./Sq. In.)	Torsional Yield Point	Maximum Unit Shear* (Lbs./Sq. In.)	Safety Factor Based on Torsional Yield Point
6⅝	3,400	9.1	13,500	2.3
5-9/16	3,750	8.3	18,750	1.65
4½	4,680	6.6	31,000	1.00

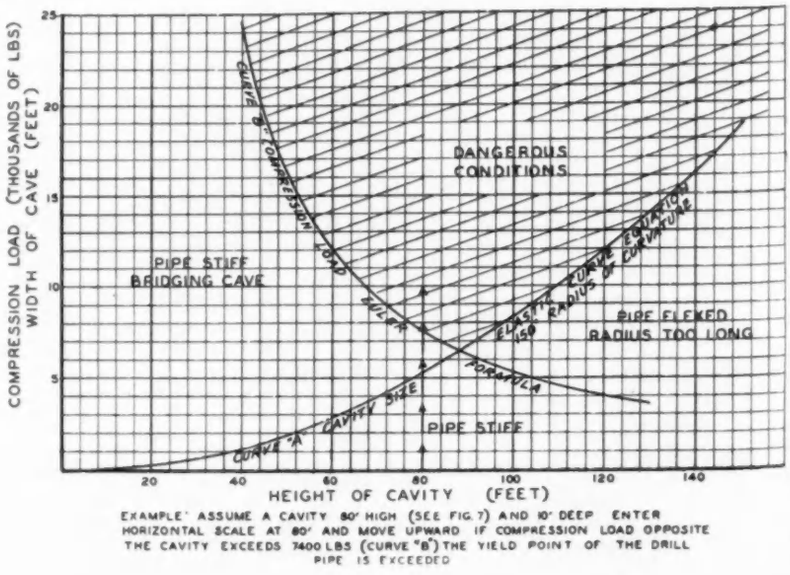
*Based on 200 pounds manifold steam pressure.
Note: Torsional yield point taken as 55 per cent of the tensile yield point.

5. *Torsional Shock—Resilience.*

Rotating drill pipe is subject to considerable shock, especially in rough drilling. Methods of estimating the amount are unsatisfactory, and the data given should be considered as preliminary only.

The resilience theory permits calculating the amount of

FIG.9


6⅝" DRILL PIPE
THEORETICAL HEIGHT AND WIDTH OF CAVITIES TO CAUSE DRILL PIPE FAILURE
STRESS TO YIELD POINT OF GRADE D PIPE = 55000 LBS.
COMPRESSION LOAD (THOUSANDS OF LBS)
WIDTH OF CAVE (FEET)
HEIGHT OF CAVITY (FEET)
DANGEROUS CONDITIONS
PIPE STIFF BRIDGING CAVE
PIPE FLEXED RADIUS TOO LONG
PIPE STIFF
CURVE "A"
CURVE "B"
CAVITY SIZE
EXAMPLE: ASSUME A CAVITY 80' HIGH (SEE FIG. 7) AND 10' DEEP. ENTER HORIZONTAL SCALE AT 80' AND MOVE UPWARD IF COMPRESSION LOAD OPPOSITE THE CAVITY EXCEEDS 7400 LBS (CURVE "B") THE YIELD POINT OF THE DRILL PIPE IS EXCEEDED

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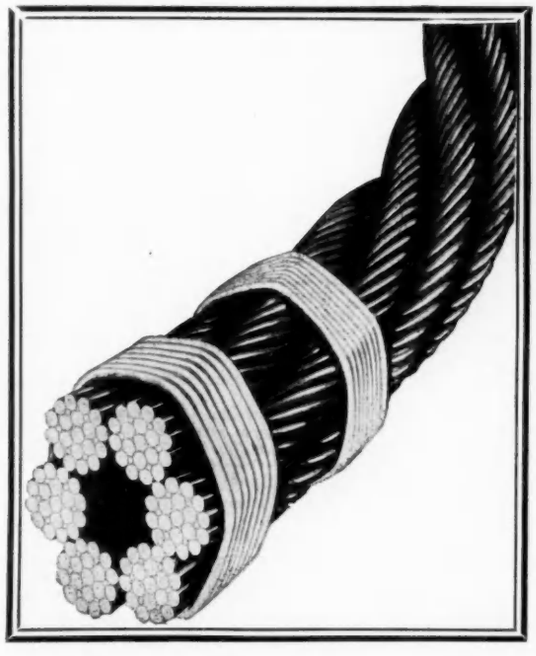

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energy stored in the pipe as it is twisted, but does not indicate the distribution of this stress either while the energy is being stored, or as it is being released. The following table gives the calculated maximum energy per cubic inch of drill pipe that can be generated with present drilling equipment, assuming uniform stress concentration.

TABLE IV

Size Drill Pipe Inches	Maximum Energy Applied[1] Inch-Lbs. Cu. In.	Safety Factors[2] Grade "C"	Grade "D"	"Special" Steel[3]
6⅝	6.86	4.92	7.35	24.3
5-9/16	12.9	2.62	3.92	12.9
4½	34.3	(0.98)	1.47	4.87

[1]Assuming 200 pounds maximum steam pressure.
[2]Resilience Moduli—(calculated)
Grade "C" 33.8 inch-pounds per cubic inch
Grade "D" 50.5 inch-pounds per cubic inch
"Special" 194.0 inch-pounds per cubic inch
[3]100,000 pounds yield point.

6. *Fatigue.*

Fatigue has been held responsible for the majority of drill pipe failures in the past, but evidence recently worked out indicates that it is not as important as originally thought. Fatigue failures result from the application of a large number of repeated stresses smaller in magnitude than the ultimate strength of the material. Fatigue failures start from partings of microscopic size, and apparently are accelerated in the presence of corrosive agents as will be discussed later.

Tests have indicated that in the absence of corrosion, repeated stresses as high as 45 per cent of the ultimate strength of the material can be applied indefinitely without causing failure. This figure, (45 per cent of the ultimate), is called the Endurance Limit.

Maximum fatigue stresses probably occur at the top of the drill collar. Table 5 shows maximum calculated unit tensile stresses at the top of the drill collar in normal hole based on what is considered maximum drilling weight (30,000 pounds on the bit). The stresses are compared with the calculated endurance limit of Grade "D" pipe.

TABLE V

Diameters Pipe Inches	Hole Inches	Maximum Tensile Stress (Lbs./Sq. In.)	Calculated Endurance Limit (Lbs./Sq. In.)	Safety Factor
6⅝	18	11,600	43,000	3.7
5-9/16	12¼	9,500	43,000	4.5
4½	8¼	8,800	43,000	4.9

These figures cannot be accepted as entirely reliable, but the safety factors are large enough to indicate that the fatigue failure theory is not important except when the drill pipe has been affected by corrosion.

*A. S. T. M. Preprint No. 27.

7. *Corrosion Fatigue.*

Recent investigations, as reported to the American Society for Testing Materials*, have indicated that the endurance limit for steel falls below the average for normal repeated stresses when exposed to corrosive agents. It has been concluded that corrosion pitting is accelerated when the material is exposed to repeated stresses and that the failures originate from the high localized stresses existing around the corrosion pits.

Quantitative data on corrosion fatigue have not been worked out, but is has been indicated that corrosion inhibitors, such as potassium dichromate, et cetera, render steel less subject to corrosion fatigue failure, and that stainless steels are preferable to ordinary steels in this respect.

These data indicate it is unwise to calculate the endurance limit as 45 per cent of the ultimate strength for used drill pipe. Accordingly, the safety factors just given in Table V are maximum, and hold only for relatively new pipe.

8. *Residual Stresses.*

The preceding calculations are all based on A. P. I. minimum specifications. Manufacturers are now marketing drill pipe that tests considerably higher than these specifications. The result is an added margin of safety in case of residual stresses, accidental flaws, excessive corrosion, etc.

9. *Design of Drilling Strings.*

Summing up the analysis, it appears that the majority of drill pipe failures not directly traceable to flaws, damaged threads, or the like, probably result from strains set up in over-gauge hole. The only way to completely eliminate these strains is to use a drill collar heavy enough to supply all the drilling weight required, thereby leaving the drill pipe in tension. A drill collar of this size would entail a large first cost, and might offer considerable fishing difficulties should failure occur.

An alternative is to use heavy pipe for stiffening and special steel immediately above the drill collar or stiffening, where the flexure occurs.

Improving the quality of steel will not affect the column strength of the drilling string, but will increase its resistance to failure from bending.

Heavier pipe (smaller inside diameter) will have greater column strength, and will also be better able to resist bending failure.

While the analysis outlined above permits the design of stiffened drilling strings, the lack of general uniformity in the relation between the drill pipe and hole diameters in common practice renders it undesirable to present detailed designs of drill strings in the present paper. It is believed that each operator can quite readily work out the specific combination best suited for his particular needs.

MARKETS — STATISTICS

East Texas average down 170,000 barrels daily because of production holiday; market prices holding mainly because there is no lower to go

East Texas Shut Down Influences Big Decline

UNITED STATES crude oil production statistics for the week ending April 8 were largely controlled by the East Texas field, which was shut down completely by the Texas Railroad Commission on the morning of April 6, to be closed in for five days preparatory to inauguration of a new proration program. The nation's average output during the week of April 8 was 2,042,550 barrels daily, as compared with 2,228,465 barrels teh previous week, exclusive in each instance of considerable oil produced in excess of proration allowables and not reported. Thus reported production dropped 185,915 barrels.

By virtue of the East Texas shut-down, reported production for Texas dropped about 165,000 barrels, falling from 940,125 barrels daily for the previous week to 774,750 barrels per day during the April 8 period. The East Texas field itself accounted for a drop of 170,000 barrels, other sections of the state showing only minor changes. The reported output for East Texas for the week of April 8 was a daily average of 230,000 barrels daily, arrived at by dividing four days of production at 400,000 barrels daily over the seven-day period; while reported production the previous week was around 400,000 barrels daily for the whole week.

When unreported but estimated production in East Texas for each of the above two one-week periods is considered, an even greater drop in output is indicated, since the field was estimated to have produced actually around 750,000 barrels daily during the week of April 1 instead of the 400,000 barrels reported. That excessive rate of production is reported to have declined somewhat during the early part of the week of April 8 due to congestion of railroad tank car traffic, so that the output of the field even for the first four days of the week was down somewhat, while the shut-down affecting the last three days of the week brought the average for the whole week down to perhaps 375,000 barrels daily, as compared with the 230,000-barrel average based on reported production. Thus when unreported production for both weeks is considered, it is indicated that East Texas production was actually about 375,000 barrels per day lower for the week of April 8 than the previous week, as compared with a drop of 170,000 barrels indicated by reported production.

THE OIL WEEKLY
Estimated Average Daily Production of Crude Oil, in Barrels.

District or State	Week Ending April 8	April 1
TEXAS—		
Texas Panhandle	52,500	55,225
North and West Central Texas	74,900	73,900
West Texas	160,500	160,000
East Central Texas	58,600	57,500
East Texas Field	*230,000	**400,000
South Texas	49,650	46,500
Total Texas Outside Gulf Coast	626,150	793,125
Texas Gulf Coast	148,600	147,000
Total Texas	774,750	940,125
OKLAHOMA—		
Oklahoma City	102,730	134,500
Seminole Area	131,500	120,100
Others	172,010	176,000
Total Oklahoma	406,240	430,600
KANSAS—		
Ritz-Decker	25,655	24,200
Voshell	12,170	11,250
Others	83,035	85,540
Total Kansas	120,860	120,990
LOUISIANA—		
North Louisiana	30,000	29,725
Louisiana Gulf Coast	36,850	35,650
Total Louisiana	66,850	65,375
ARKANSAS	30,500	30,475
CALIFORNIA—		
Long Beach	69,000	69,000
Santa Fe Springs	53,600	54,000
Huntington Beach	26,000	25,800
Dominguez	18,300	18,000
Inglewood	12,100	12,000
Ventura Avenue	33,000	36,700
Seal Beach	80,000	7,000
Midway-Sunset	48,000	47,500
Elwood	13,300	13,300
Kettleman Hills	56,000	58,000
Playa Del Rey	11,600	11,600
Others	111,100	110,100
Total California	460,000	463,000
MOUNTAIN STATES—		
Wyoming	31,450	31,150
Montana	5,000	5,550
Colorado	2,600	2,500
New Mexico	37,450	37,350
Total Rocky Mountain States	76,500	76,550
EASTERN STATES	93,400	87,200
MICHIGAN	13,450	14,150
Total United States	2,042,550	2,228,465

***Represents only reported production of about 400,000 barrels daily for first four days of week (field shut down morning of April 6), such total being averaged over whole seven-day period. Actual production estimated at about 650,000 barrels daily, due to excesses above proration allowables, for first four days of week, but subsequent shut-down reported nearly 100 per cent effective; thus actual production for whole week estimated to have averaged about 370,000 barrels daily.**
****Only reported production; actual output estimated at about 750,000 barrels daily.**

Outside of Texas the only important change in rate of crude oil production was in Oklahoma, which averaged 406,240 barrels daily for the week ending April 8, a decline of 24,360 barrels from the level of the previous week, brought about largely by a drop of similar proportions at Oklahoma City field, which was shut down by executive order.

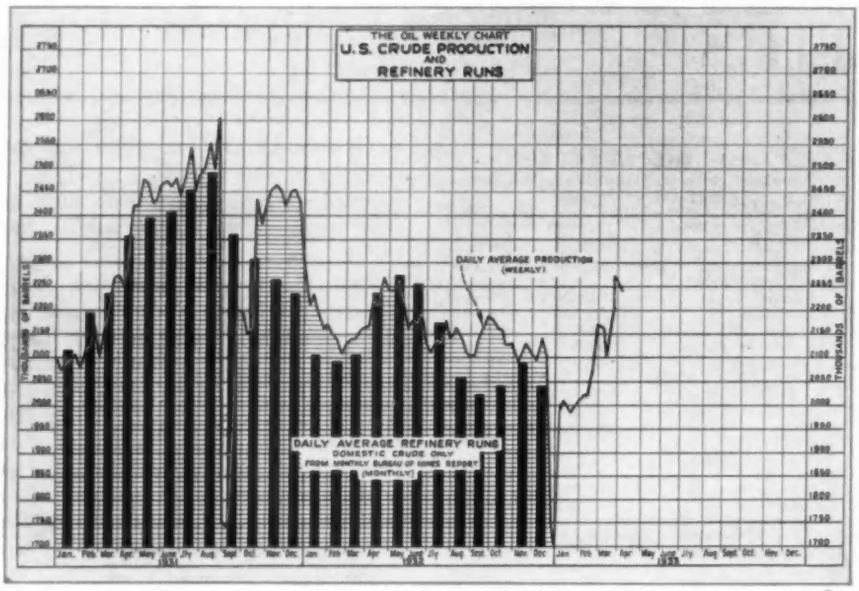
California registered a 3000-barrel decline in averaging 460,000 barrels daily for the new week.

While the lowered production figures for the week ending April 8 furnish temporary comfort to the oil industry, it must be taken into account that they embody three days of the East Texas shut-down which was scheduled to terminate after five days duration; and in looking ahead there is small encouragement in the current crude oil production situation, with Texas apparently destined to produce more than economic conditions warrant.

The Texas Railroad Commission has authorized an allowable output of 541,700 barrels daily from all fields of the state outside of East Texas until August 1, which is a slight increase over the former allowable. At the same time it appears that the commission will be obliged to permit more than 400,000 barrels daily production from the 10,000 completed wells of the East Texas field in order to stay within its powers; in which event the state's total allowable will be around 950,000 barrels daily at least.

If Texas is allowed to produce at that rate and if other states continue around current levels, the total output for the United States will be about 2,200,000 barrels daily, or approximately 200,000 barrels daily in excess of market requirements as estimated recently by the Federal Oil Conservation Board's voluntary committee on petroleum economics.

The Texas attorney general gave the opinion recently that the railroad commission under existing law does not have the right to restrict East Texas flowing wells to less than 40 barrels daily apiece since pumping wells there are permitted 40 barrels daily production each under a "marginal well" exemption provision, and since it would seem unfair to prorate flowing wells, which are capable of greater production, to allowables below that exemption point for "marginal wells." Under the proration program in effect in East Texas prior to April 6 flowing wells were restricted to allowables ranging roughly from 32 to 38 barrels daily. With the idea of making it lawful for the railroad commission to restrict East Texas wells to less than 40 barrels daily each, a bill has been introduced in the Texas legislature lowering the "marginal well" exemption.



California Production Again Above Allowable

PRODUCTION is again running above the allowable, and the problems which faced the industry before the earthquake are again in evidence. After falling to as little as 355,000 barrels daily for a short time, production rushed back up to around 460,000 barrels on very short notice.

Long Beach, Santa Fe Springs, Huntington Beach and Kettleman Hills are producing most of the excess. Oil moving out during the night at Long Beach has been causing curtailment leaders much worry. At Huntington Beach, several companies are producing at a maximum rate, and opening of offsets has forced the daily average to a higher figure than allowed.

Sharp reduction in refinery runs during part of March normally would have benefitted all branches of the industry, but the greatly decreased consumption largely offset the smaller production of refined products. Pacific Coast states showed little industrial activity during a part of March, and this period accounted for very limited gasoline consumption.

The problem of moving fuel oil has become a serious one with many refiners. They have been able to market their gasoline, but the heavier fractions have been left in storage. Lower consumption of fuel oil during the past three winters has been felt sharply by refiners who must sell the heavier fractions to realize a profit on each barrel of oil purchased.

Two or three major purchasing companies are concerned over their inability to reduce stocks. Much of this oil has been carried for years, and could not be sold at a profit under any circumstances.

A smaller amount of crude oil is required as cracking increases in California. This will make reduction of stocks still more difficult, in the face of a lower domestic consumption.

Slightly stronger prices prevail in the Pacific Northwest, and the gasoline price war has been settled in favor of a lower schedule than formerly prevailed.

United States Imports Show Big Gain for Week

IMPORTS of crude and refined oils at principal United States ports for the week ended April 1 totaled 1,228,000 barrels, a daily average of 175,429 barrels, as compared with 112,429 barrels daily the previous week and 151,107 barrels daily the four weeks ended April 1. These figures are from American Petroleum Institute reports.

The 1,228,000 barrels included 106,000 barrels received at Baltimore, 727,000 barrels at New York, 258,000 barrels at Philadelphia, and 137,000 barrels at other Atlantic ports; and comprised 691,000 barrels of crude oil and 537,000 barrels of fuel oil.

Receipts of California oil, crude and refined, at Atlantic and Gulf Coast ports for the week ended April 1 totaled 262,000 barrels, a daily average of 37,428 barrels, compared with 59,571 barrels daily the previous week and 55,964 barrels daily for the four weeks ended April 1.

The 262,000 barrels included 37,000 barrels received at Baltimore, 80,000 barrels at New York and 71,000 barrels at other Atlantic ports, and 74,000 barrels fuel oil at Port Arthur, the Atlantic shipments comprising 117,000 barrels of gasoline and 145,000 barrels of fuel oil.

Refined Market Slow and Nobody Anxious to Sell

MID-CONTINENT market conditions remained practically unchanged during the past week with no outstanding weaknesses observed. On the other hand there appeared to be nothing which might indicate a strengthening at least in the immediate future. In the face of continued uncertainty over the crude oil situation this condition of the refined market is being interpreted in an optimistic vein by some observers. Others feel that prices have decreased to such a point that sellers can sustain nothing but loss and therefore are unwilling to push sales, being content to make routine deliveries on contracts. Many oil leaders of the Mid-Continent express disappointment over the results obtained in the recent conference of governors from the oil producing states. Strong and immediate action on the part of the federal government had been expected and little benefit apparently will be derived from the proposal regarding interstate shipments of oil produced in violation of state laws.

Oklahoma producers and purchasers have been rocking along for several weeks expecting the passage of a new proration law which has been pending since shortly after the present session of the legislature convened. Whether the proration bill will be enacted into law or became entangled in a last minute rush remains problematical. Conditions under the present law are not expected to improve. The bill originally introduced has been considerably amended and now is said to meet with the general approval of the industry. However, regardless of the strength of any new law, proration enforcement will depend largely upon the type of organization appointed as an enforcement agency. It is feared in many circles that the proposed proration department will be composed of or controlled by politicians whose interests will not be for the good of the industry as a whole.

Shut down, by executive order, of

Crude Runs to Stills, Motor Fuel Stocks, Gas and Fuel Oil Stocks and Cracked Gasoline Production, Week Ended April 1, 1933

(Figures in barrels of 42 gallons each)

DISTRICT	Daily Refining Capacity of Plants			Crude Runs to Stills		MOTOR FUEL STOCKS					Gas and Fuel Oil Stocks	Daily Charging Capacity of Cracking Units			Cracked Production Daily Average
	Potential Rate	Reporting Total	Reporting %	Daily Average	% Operated	(a) At Refineries	(b) Bulk Terminals	(b) In Transit	(c) Other M. F. Stocks	Total Motor Fuel		Potential Rate	Reporting Total	Reporting %	
East Coast	644,700	638,700	99.1	466,000	73.0	5,994,000	8,012,000	1,499,000	437,000	15,942,000	6,058,000	344,400	326,400	94.8	86,000
Appalachian	144,700	135,000	95.0	71,000	52.6	1,452,000	331,000	.....	213,000	1,996,000	851,000	59,100	57,600	97.5	19,000
Ind. Ill., Ky	434,900	424,000	97.5	313,000	73.8	6,235,000	2,455,000	.....	113,000	8,803,000	3,438,000	341,400	328,200	96.1	93,000
Okla., Kans., Mo	459,300	390,000	84.9	204,000	52.3	3,826,000	1,049,000	.....	707,000	5,582,000	3,037,000	257,400	238,100	92.5	47,000
Inland Texas	315,300	177,700	56.4	74,000	41.6	1,359,000	57,000	.....	276,000	1,692,000	2,163,000	117,300	95,100	81.1	19 000
Texas Gulf	555,000	542,000	97.7	396,000	73.1	6,040,000	178,000	.....	328,000	6,546,000	6,288,000	506,500	495,500	97.8	73,000
Louisiana Gulf	146,000	142,000	97.3	101,000	71.1	1,614,000	208,000	.....	10,000	1,832,000	2,198,000	74,400	74,400	100.0	22,000
North La.,—Ark.	89,300	79,000	88.5	32,000	40.5	210,000	29,000	18,000	35,000	292,000	646,000	29,500	25,500	86.4	9,000
Rocky Mountain	152,600	138,000	90.8	24,000	17.4	1,501,000	.....	.....	31,000	1,532,000	620,000	71,400	68,100	95.4	7,000
California	915,100	866,100	94.6	440,000	50.8	12,437,000	.....	.....	2,450,000	14,887,000	98,524,000	197,700	197,700	100.0	28,000
TOTALS WEEK: April 1, 1933	3,856,300	3,532,500	91.6	2,121,000	60.0	40,668,000	12,319,000	1,517,000	4,600,000	59,104,000	123,823,000	1,999,100	1,906,600	95.4	403,000
March 25, 1933	3,856,300	3,532,500	91.6	2,085,000	59.0	40,719,000	12,466,000	1,012,000	4,550,000	58,747,000	123,005,000	1,999,100	1,906,600	95.4	401,000
Below are set out estimates of Crude Runs to Stills and Motor Fuel Stocks on B. of M. Basis for Week April 1, 1933, compared with certain April 1932 Bureau figures.															
Estimate B. of M. Basis Week April 1, 1933				2,215,000	(d)	41,270,000	14,240,000		4,600,000	60,110,000					435,000
U. S. B. of M. April 1932 Figures:—					4/1	47,235,000	14,248,000		5,320,000	66,803,000					
April 1932 Daily Average Crude Runs				2,371,000	4/30	46,822,000	15,298,000		5,622,000	67,742,000	April 1932 Daily Average Cracked Prod.				454,000

(a) Stocks at refineries, except in California district, which includes stocks of finished gasoline and engine distillate at refineries, at water terminals and at sales distributing stations and any amounts in transit thereto.
(b) By districts, East of California only. In California, bulk terminal and in transit stocks are included under the "At Refineries" heading. See Note (a).
(c) Estimated. Includes motor fuel in pipe lines and unblended natural gasoline at refineries and plants, also blended Motor Fuel at plants.
(d) Estimated to permit comparison with A. P. I. Economics Report which is on Bureau of Mines basis.

the Oklahoma City pool from March 5 to 14, apparently had a marked effect upon movement to and from storage in Oklahoma and Kansas. During the week ending March 28 estimated net crude oil movement was 2100 barrels daily to storage compared to 48,100 barrels daily net to storage during the preceeding week. Production from the Oklahoma City pool during the executive shut down dropped to as low as 25,237 barrels and averaged approximately 43,460 barrels for the nine-day period. Immediately following reopening of the pool on March 14 production soared to a peak of 324,535 barrels and the average remained high until the last day of the month when production was reported to have been 62,243 barrels from 130 wells. During this period of excessive production it was estimated that as much as 30,000 barrels per day were being produced but not reported as production. As a result any beneficial effect of the executive shut down probably was eliminated although reported production did not exceed net allowable for the month.

Ruling prices based on Group 3, Oklahoma, and exclusive of federal tax, appeared to be as follows:

Refinery Gasolines

Low octane U. S. Motor fuel, 2 to 2¼ cents; middle octane, 2⅛ to 2⅜ cents; high octane, 2½ to 2⅝ cents; 60-62, 400 h. p., 2⅛ to 2⅜ cents; 64-66, 390 e. p., 2¼ to 2½ cents; 64-66, 375 e. p., 2½ to 2¾ cents; and 68-70, 350 e. p., 2⅝ to 2⅞ cents.

Natural Gasolines

Low gravity, 11 to 12-pound vapor pressure, 3¼ to 3⅜ cents; 14 to 15-pound vapor, 2¾ to 3 cents; 16 to 18-pound vapor, 2¼ to 2½ cents; 22 to 24-pound vapor, 2 to 2¼ cents; and 26-70 grade, 1¼ to 1⅜ cents.

Kerosenes

The 41 to 43 gravity water white 2¼ to 2⅜ cents; 42 to 44, 2⅜ to 2½ cents; and 44 to 46, 2⅞ to 3 cents.

Summarized Review of Week's Field Results

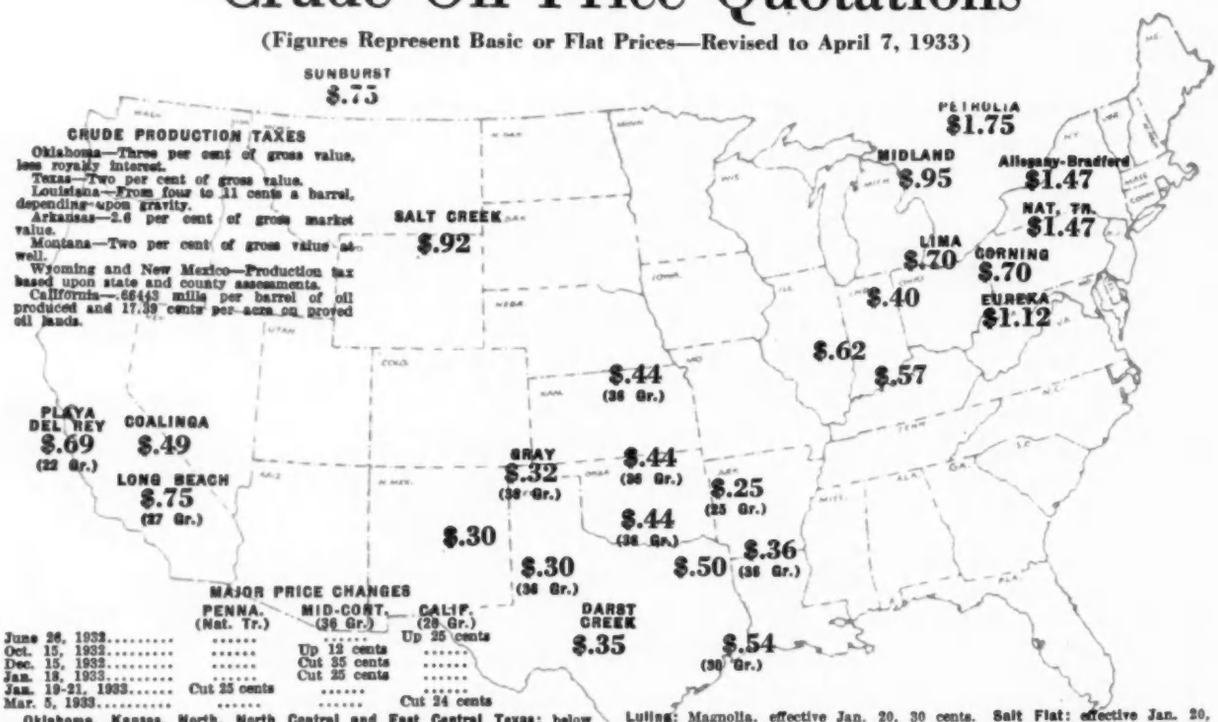
State	Completions	Oil wells	Gas wells	Failures	Initial prod.
Arkansas	0	0	0	0	0
California	3	2	0	1	2,700
Illinois	1	0	0	1	0
Indiana	3	0	3	0	0
Kansas	8	5	0	3	2,272
Kentucky	0	0	0	0	0
Louisiana	11	9	0	2	4,050
Michigan	2	1	0	1	300
Mississippi	0	0	0	0	0
New Mexico	2	1	0	1	130
New York	1	0	1	0	0
Ohio	12	3	7	2	109
Oklahoma	19	15	0	4	77,023
Pennsylvania	2	1	0	1	5
Texas	86	60	1	25	238,515
West Virginia	5	1	3	1	5
Miscellaneous	0	0	0	0	0
Total	155	98	15	42	325,109

Comparison of Permits Granted for New Wells

State	For week ending Apr. 1	Total this month	Total this year	Total this date last year	1932 year total
Arkansas	0	3	28	2	33
California	6	27	67	63	354
Louisiana	4	47	111	102	451
Kansas	15	69	142	134	463
Michigan	5	29	68	31	183
Oklahoma	21	93	246	269	1054
Texas	121	470	1513	1580	7099
Totals	172	738	2175	2201	9637

Crude Oil Price Quotations

(Figures Represent Basic or Flat Prices—Revised to April 7, 1933)



CRUDE PRODUCTION TAXES

Oklahoma—Three per cent of gross value, less royalty interest.
Texas—Two per cent of gross value.
Louisiana—From four to 11 cents a barrel, depending upon gravity.
Arkansas—2.6 per cent of gross market value.
Montana—Two per cent of gross value at well.
Wyoming and New Mexico—Production tax based upon state and county assessments.
California—.66443 mills per barrel of oil produced and 17.39 cents per acre on proved oil lands.

MAJOR PRICE CHANGES

	PENNA. (Nat. Tr.)	MID-CONT. (36 Gr.)	CALIF. (20 Gr.)
June 26, 1932	.....	.....	.....
Oct. 15, 1932	.....	Up 12 cents	Up 25 cents
Dec. 15, 1932	.....	Cut 35 cents	.....
Jan. 18, 1933	.....	Cut 25 cents	.....
Jan. 19-21, 1933	Cut 25 cents	.....	.....
Mar. 5, 1933	.....	.....	Cut 24 cents

Oklahoma, Kansas, North, North Central and East Central Texas: below 29 gravity 28 cents, 29-29.9 gravity 30 cents, with 2-cent differential to top of 52 cents 40 and above: effective Jan. 18-20, 1933.

East Texas: Effective Jan. 18, 1933, 50 cents.

Corsicana, Texas, Heavy: Magnolia, effective Jan. 20, 1933, 30 cents.

Texas Panhandle: The Magnolia Petroleum Company, effective March 7, for Gray County, posted 30 cents per barrel for oil below 36 gravity, with 2-cents differential for each gravity degree up to 40 and above, which is 40 cents per barrel; for Carson and Hutchinson Counties, 36 gravity is 20 cents per barrel and differential of 2-cents beginning at 36 to 40 and above, which is 30 cents per barrel. March 6 The Texas Company posted for Gray County 30 cents for oil of 35 gravity with a 2-cent differential for each degree up to 40 and above, which is 40 cents. Carson and Hutchinson Counties on The Texas Company schedule begins at 20 cents for 35 gravity oil with 2-cent differential to and including 40 gravity and above, which is 30 cents.

Humble, effective Feb. 28, 1933, quoted range for Gray County from 30 cents for below 36 gravity, by 2-cent differential to 40 cents for 40 gravity and above; and for Carson-Hutchinson Counties 20 to 30 cents for same grades.

West Texas and New Mexico: Effective Jan. 19, 1933, by Texas Co., Jan. 20 by Humble, Shell, Magnolia, Gulf and others: 30 cents a barrel. Includes crude from Crane-Upton, Crockett, Ector, Howard-Glasscock, Pecos, Jones, Fisher and Winkler Counties, Texas, and Lea County, N. Mex.

Gulf Coast: The Texas Company, effective March 6, 1933, below 22 gravity 45 cents with one-cent differential to 64 cents for 40 gravity and above. Humble, Gulf, Sun, and Atlantic, effective Jan. 20, 1933, below 20 gravity 32 cents, 20-20.9 gravity 34 cents, with two-cent differential to 62 cents.

Cameron Meadows, Louisiana, Magnolia, effective Jan. 20, 1933, below 20 gravity 22 cents, 20-20.9 gravity 24 cents, with two-cent differential, ending with 34 gravity and above 52 cents.

Conroe, Texas: The Texas Co., effective March 6, 1933, 59 cents for 35-35.9 gravity, with one-cent differential upward to 64 cents for 40 gravity and above. For same grades Humble, effective Jan. 20, quoted range of 54 to 64 cents using two-cent differential; while Tide Water posted a range of 59 to 64 cents, using a one-cent differential.

South Texas:

Darst Creek: The Texas Co., effective Jan. 19, 1933, and Magnolia, effective Jan. 20, 35 cents; Humble effective Jan. 20, posted 40-cent price.

Luling: Magnolia, effective Jan. 20, 30 cents. **Salt Flat:** effective Jan. 20, 1933, Humble and Shell 40 cents. **Lytton Springs:** Magnolia, Jan. 20, 45 cents. **Mirando:** Humble and Magnolia, Jan. 20, Texas Co., March 6, 1933, 35 cents. **Pettus:** Humble, Jan. 20, 55 cents. **Refugio Heavy:** Humble and Atlantic, effective Jan. 20, 1933, 45 cents. **Refugio Light:** same as Gulf Coast.

North Louisiana and Arkansas:

Caddo, Homer, Haynesville, Bull Bayou, Sabine, Crichton, DeSoto-Red River, Cotton Valley, Sarepta, Cartersville, Pine Island, El Dorado, Rainbow Light: The Texas Co., effective Jan. 19, 1933, and Gulf and Louisiana Oil Ref. Co., effective Jan. 20: below 29 gravity 28 cents, 29-29.9 gravity 30 cents, with 2-cent differential to 52 cents for 40 gravity and above. **Standard:** Caddo below 29 gravity 20 cents, with 2-cent differential to 44 cents for 40 and above; Homer below 29 gravity 28 cents to 52 cents for 40 and higher; Haynesville below 29 gravity 19 cents and 2-cent differential to 43 cents for 40 gravity and above; Sabine, DeSoto and El Dorado below 29 gravity 25 cents with 2-cent differential to 49 cents for 40 gravity and above; Sarepta-Cartersville below 29 gravity 17 cents and 2-cent differential to 41 cents for 40 gravity and above. Magnolia, effective Jan. 20, 1933, below 29 gravity 20 cents, 25-25.9 gravity 22 cents, with 2-cent differential to 44 cents for 40 gravity and above, except El Dorado (East), posted at 30 cents flat price.

Smackover: The Texas Co., effective Jan. 19, 1933, and Gulf, effective next day: 30 cents; Standard of La. and Magnolia, effective Jan. 20, 20 cents, Louisiana Oil Ref. Co., effective Jan. 20, 25 cents.

Rocky Mountain States: (Effective December 16, 1932).

Salt Creek: Below 29 gravity 76 cents; 29-29.9 gravity 78 cents with differential of 2 cents each degree to 40 and above. Top price $1.00.

Elk Basin and Grass Creek: 87 cents; **Big Muddy:** effective Jan. 24, 1933, 50 cents; **Lance Creek:** 92 cents; **Rock Creek:** effective Jan. 24, 1933, 46 cents; **Sunburst:** effective November 7, 1932: 75 cents; **Osage:** 98 cents; **Cat Creek:** $1.20; **Pondera:** 90 cents; **Hogback, New Mexico:** 80 cents.

Mid-Western States: (Effective Jan. 18, 1933).

Lima: 70 cents. **Indiana:** 40 cents; **Illinois:** 62 cents; **Princeton:** 62 cents; **Wooster:** 70 cents; **Western Kentucky:** 57 cents.

Pennsylvania: (Effective Jan. 21, 1933).

Bradford District: $1.47; National Transit Oil: $1.47; Southwest Pennsylvania Pipe Line Oil: $1.17; Eureka Pipe Line Oil: $1.12; Buckeye Pipe Line Oil: 97 cents; Cornlng Crude: 70 cents.

Michigan: (Dec. 31, 1932). **Midland:** 95 cents. **Muskegon:** 76 cents to $1.00. **Canada:** (Effective Jan. 18, 1933). **Petrolia: $1.75; Oil Springs: $1.82.**

California—Posted by Standard Oil Company and Union Oil Company. Effective March 5, 1933, at 7:00 a.m.

Gravity	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
14-14.9	$ .55	$ .55	$ .55	$ .55	$ .55	$ .55	..	..	$ .55	$ .55	$ .55	$ .55	$ .55	..	$ .49	$ .49	$ .49	$ .49	$ .49	$ .55	..
15-15.9	.55	.55	.55	.53	.55	.55	..	..	.55	.55	.55	.55	.55	..	.49	.49	.49	.49	.49	.55	..
16-16.9	.55	.55	.53	.55	.55	.55	..	..	.55	.55	.55	.55	.55	..	.49	.49	.49	.49	.49	.55	$ .49
17-17.9	.55	.55	.58	.58	.58	.58	..	..	.57	.56	.57	.55	.55	..	.49	.49	.50	.49	.49	.55	.49
18-18.9	.57	.55	.61	.61	.60	.61	..	..	.59	.58	.59	.55	.57	..	.49	.49	.52	.49	.49	.55	.49
19-19.9	.59	.57	.63	.64	.62	.64	..	..	.61	.61	.61	.55	.59	..	.49	.49	.54	.49	.49	.55	.49
20-20.9	.61	.59	.64	.67	.64	.66	..	..	.62	.63	.63	.55	.61	..	..	.52	.56	.49	.49	.56	.52
21-21.9	.63	.62	.66	.69	.66	.68	..	..	.64	.66	.65	.55	.63	$ .57	..	.55	.58	.51	.50	.57	.55
22-22.9	.65	.64	.68	.71	.69	.70	..	..	.66	.68	.67	.57	.65	.59	..	.57	.60	.53	.52	.58	.57
23-23.9	.67	.67	.70	.73	.71	.72	..	..	.68	.70	.69	.60	.67	.62	..	.60	.62	.55	.54	.59	.60
24-24.9	.69	.69	.72	.75	.73	.73	$ .65	..	.70	.73	.71	.62	.69	.64	..	.63	.63	.57	.56	.60	.63
25-25.9	.71	.72	.74	..	.75	.75	.68	..	.72	.75	..	.65	.71	.66	..	.66	.65	.59	.58	.61	.66
26-26.9	.73	.74	.75	..	.77	.77	.70	..	.73	.77	..	.68	.72	.69	..	.68	.67	..	..	.63	.68
27-27.9	.75	.76	.77	..	.79	.79	.73	F. O. B. Ship	..	.80	..	..	.74	.71	..	.71	.69	..	..	.65	..
28-28.9	.77	.79	.79	..	.81	.81	.75	..	..	.82	..	..	.76	.73	..	.74	.71	..	..	.67	..
29-29.9	.79	.81	.81	..	..	..	.78	..	..	.84	..	..	.78	.76	..	.76	.73	..	..	.69	..
30-30.9	.81	.84	.83	..	..	..	.81	..	..	..	..	..	.80	.78	..	.79	.75	..	..	.71	..
31-31.9	..	..	..	..	..	..	.83	..	..	..	..	..	.82	.80	..	.82	..	..	..	..	..
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Subject to field gathering charge of 5c per barrel.

1—Signal Hill. 2—Seal Beach, Alamitos Heights, Union posts to 26 at 74 cents. 3—Huntington Beach, Union posts through 26 at 75 cents. 4—Inglewood. 5—Playa del Rey, Union posts from 19, 62 cents, through 26 at 77 cents. 6—Olinda-Brea Canyon. 7—Athens-Rosecrans, Domingues, Union posts through 35 gravity, 90 cents. 8—Elwood Terrace. 9—Torrance, Union posts only through 25 gravity. 10—Richfield, Union posts only through 25 gravity. 11—Whittier-LaHabra. 12—Montebello, Union posts only through 25 gravity. 13—Coyote Hills, Union posts only from 14 through 24 gravity. 14—Santa Fe Springs, Union posts only 24 through 35 gravity. 15—Newhall, McKittrick, Kern River. (See 16). 16—Midway-Sunset, Elk Hills, Buena Vista Hills, Union quotes 44 cents through 13 gravity and stops at 30 gravity, 79 cents. Union schedule applies this price to fields listed under 15. 17—Lost Hills, Union quotes 44 cents through 13 gravity. 18—Coalinga, Union quotes 44 cents through 13 gravity. 19—Wheeler Ridge, Union only. 20—Santa Paula, Union only. 21—Kettleman Hills.

SHELL

MEN IN THE INDUSTRY'S NEWS

FRANK T. PICKRELL, who amassed a fortune from production and later disposed of properties in the Big Lake field, first major oil producing area uncovered in West Texas, has returned to Fort Worth to re-enter the oil business after having spent recent years in New York City. As vice president and general manager of the Texon Oil & Land Company, Pickrell was more responsible than any other person for the company's success in opening the Big Lake field in May, 1923, although the actual drilling of the discovery well and the later development of what proved to be for several years the deepest oil and gas production in the world, was under the direction of the late Carl G. Cromwell.

JIM BERMINGHAM, vice president and manager of production for The Texas Company of California with headquarters at Los Angeles, concluded a visit to Texas early last week by renewing acquaintances with former associates in the oil business at Dallas, where he was located prior to joining up with The Texas Corporation some years ago.

WILL J. REID, president of Hancock Oil Company of California, has been attending to business in Washington and other Eastern cities.

O. C. FIELD, independent operator and president of O. C. Field Gasoline Corporation of Los Angeles, has returned to California after a world tour of several months.

JOHN B. ELLIOTT, independent operator and head of Independent Petroleum Association of California, spent a part of March in Washington. He returned to Los Angeles after leading the fight to prevent a nation-wide shut-down of oil fields. Elliott headed the forces which swept California into the Roosevelt column in November.

RALPH ARNOLD, consulting geologist, has concluded an extensive tour of Mid-Continent and Rocky Mountain states. He was asked to aid a special legislative committee in Oklahoma in formulating curtailment measures.

PAUL M. GREGG, a vice president of Union Oil Company of California, has been elected a director, to succeed Paul N. Boggs.

CARL L. ESTES, Tyler newspaper publisher who has played a prominent role in the vicissitudes of proration in East Texas, was scheduled to undergo an operation at Rochestra, Minnestoa, April 5.

H. H. FITZPATRICK, formerly proration umpire at Darst Creek, died April 2 at a Houston hospital, aged, 46 years. He was for a number of years connected with the Texas Railroad Commission as a deputy supervisor.

CHARLES G. CARLSON, consulting geologist of Tulsa, has gone to Mt. Pleasant, Michigan, where he will spend about three weeks in a survey of that area.

T. J. WOOD, former member of the firm Wood & McFarren, Inc., oil operators in the Mid-Continent fields, was a Tulsa visitor. Wood now makes his home in Houston.

H. G. NAYLOR, formerly vice president of Midwest Refining Company at Denver, has been made assistant general manager of the bulk sales division of Standard Oil Company (Indiana) at Chicago.

D. G. HAWTHORNE

Engineer, Barnsdall Oil Company, who has taken an active part in the programs of the Division of Production of the American Petroleum Institute was one of the principal speakers before the Spring meeting of the Southwestern District at Houston last week.

R. C. BECKSTROM, consulting engineer, and L. D. Wyant, refinery engineer for Alco Products, Incorporated, spoke to the Young Engineers Club of Tulsa at its monthly meeting Tuesday evening, April 4. Dr. Beckstrom presented production and refinery statistics on Russia after pointing out the location of the oil reserves of that country. Mr. Wyant, who has recently returned from Russia after a seven-month stay, spoke on general conditions there and outlined natural resources and agricultural possibilities of the country.

A. ROGER DENNISON, Texas district geologist for Amerada Petroleum Corporation, presented "The Kelsey Dome of Upshur County, East Texas," before the Tulsa Geological Society at its technical meeting held Monday evening, April 3. In addition members of the society heard a report on the recent Houston meeting of the American Association of Petroleum Geologists.

JOHN T. CUMBIE, Rocky Mountain representative for Magnolia Petroleum Company with Denver headquarters, visited his company's headquarters in Casper last week while making a survey of Wyoming and Montana properties.

JOHN T. BARNETT of Denver has been appointed a member of the board of trustees of the Colorado School of Mines at Golden, Colorado. Mr. Barnett has long been identified with developments in the Salt Creek field in Wyoming. He is a well known Denver lawyer.

H. W. LADD, assistant general superintendent of Stanolind Oil & Gas Company, who has been at his company's offices in Casper for the last few weeks, has left for Tulsa where he will be permanently located.

E. W. KRAMPERT, consulting geologist of Casper, is in Denver at the bedside of Mrs. Krampert who is seriously ill in a hospital there. Mr. Krampert was formerly chief geologist for Producers & Refiners Corporation.

C. L. HENRY, chief engineer, and Cecil Jenkins, factory engineer, for the Lee C. Moore & Company, Incorporated, Pittsburgh, Pennsylvania, visited the district sales office of the company at Dallas last week and also the East Texas oil field.

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the New BREWSTER WIRE LINE CORE DRILL

The Brewster Company is pleased to announce the perfection of a new Wire Line Core Drill. This new "fool-proof," scientifically controlled tool was made possible by the generous assistance of our friends.

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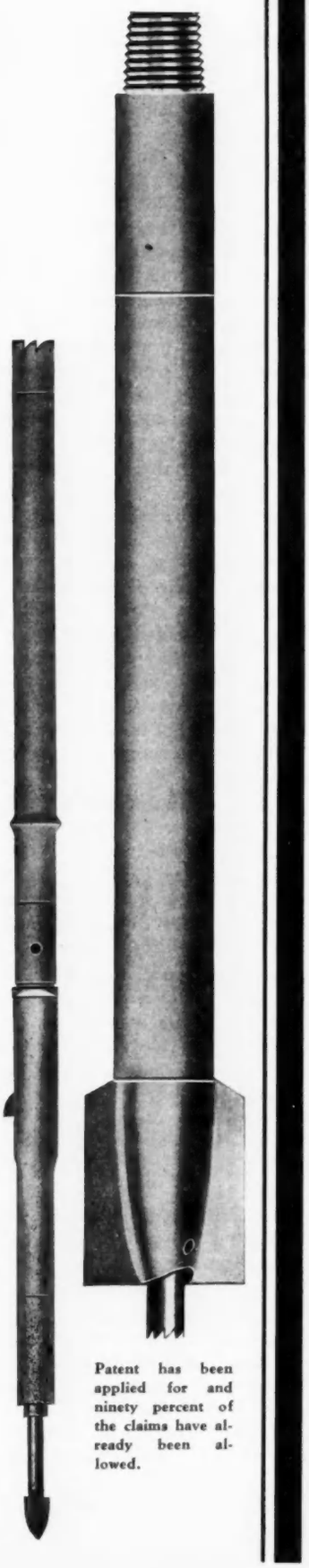
★ *Warehouses:* The Iverson Specialty Co., Oklahoma City, Oklahoma, Phone 2-2833; The Brewster Houston Store, 2000 Harrington Street, Capitol 2031; Longview, Texas, 313 E. Cotton Street, Phone 781. *Export Distributors:* Acme Well Supply Company, Inc., 136 Liberty Street, New York City.



Patent has been applied for and ninety percent of the claims have already been allowed.

Texas' Allred Confuses Statewide Hearing With Conclusions

(Continued from page 9)

every well in the field has been checked.

He suggested that the operators divide their wells by five, and test one-fifth of them each day, thus the withdrawals would be spread over the entire field, and the congestion which might follow zone tests would be avoided.

The test of every well would be witnessed and attested by one or more offset owners, and thus it would be unnecessary for the commission to have an employe present. Hudnall stated that this is the practice in Kansas, and declared it had worked satisfactorily.

The witness estimated that this would result in 400,000 to 450,000 barrels of production per day during the test period, or an average of no more than 225,000 barrels during the 10 days.

He suggested that wells with tapered tubing and wells with tubing smaller than two-inch, be given the same allowance as their nearest offset. This would also apply to water wells which might be damaged by an open flow test. He readily admitted that this would not give these wells, about 20 per cent of the wells in the field, a true potential test, but insisted that it would be sufficiently accurate for proration purposes.

Hudnall offered a plan for proration of the field. He suggested that the allowable be divided between the wells on the following basis: 30 per cent on potential; 30 per cent on bottom hole pressure, 20 per cent on acreage and 20 per cent on sand thickness.

The witness stated without equivocation, that the present spacing rule in East Texas increases rather than reduces physical waste. He insisted that the more wells that are drilled per acre, the greater will be the recovery. He was also of the opinion that wide open flow of the field would result in the same ultimate recovery as restricted flow.

Ben Belt, chief geologist for Gulf Production Company, followed Hudnall to the stand.

He advocated the adoption of the proration plan presented by Albertson, but pointed out that its chief weakness was the inability of operators to determine with accuracy the total thickness of the Woodbine formation without drilling through the sand, and further, to determine how much of this formation is productive.

Belt is of the opinion that if the allowable is kept around 300,000 barrels, equalization of pressures will take place more rapidly than production and the general pressure conditions throughout the field will improve.

He agreed with Hudnall that potential tests could be taken by areas with the present equipment, and that these tests would be sufficiently accurate for purposes of proration. He insisted however that tubing should be within 50 feet of the liner at the time the test is made.

Other Fields

Almost no evidence was introduced on the other fields and districts of the state. Most of them were passed over with the brief remark that there had been no material change in conditions since the last hearing, and operators would stand on evidence previously submitted.

Nominations

Prospective purchasers of crude filed nominations with the commission, outlining their expected needs for the months of April, May, June and July. The following table indicates the nominations by districts.

District—	Total Nominations Barrels
Panhandle	45,777
East Texas	356,452
Van	53,661
Mexia-Powell	3,300
North Texas	57,331
West Central	19,320
West Texas	171,833
Gulf Coast	138,177
Southwest Texas	47,522
Conroe	49,000
Total	943,573

East Texas Field Shut Down With Wells Relieved By Court Order

(Continued from page 7)

shut-down was supported by popular demand from producers and royalty owners hopeful of restoring effective enforcement through the writing of a new order, there were a number of violations of the shut-down before production was ordered resumed, January 1, 1933.

The latest shut-down is timed to end within five days, such a period having been deemed sufficient by the commission to take the bottom hole pressure readings, or possibly a few well potentials. Complete observance is certain to be more difficult as there are many more established outlets agreeable to operating in defiance of the shut-down order than was the case on the two previous occasions.

Tank Car Congestion

Further break in the price on spot crude sales in East Texas was threatened when the April 6 shut-down order took place, as a badly congested situation had arisen at Houston, Texas City and Louisiana points serving as the principal unloading points on tank car shipments. It is reported that available tanker loading terminals and storage facilities at the above two points in Texas had reached the saturation point, temporarily at least, when the order was released by the commission. Heavy movement of oil to Bogarts and Marrero, located on the west bank of the Mississippi River near New Orleans, was likewise rapidly exhausting limited facilities. A freight rate of 27.35 cents per 100 pounds applied on shipments moving from the East Texas field to above points. The Louisiana movement did not get underway until mid-March, but diversion of oil shipments for tanker loadings prevented an embargo on oil shipments to Houston and Texas City from materializing, although threatened for nearly two weeks. The bulk of the oil moving via rail to the above points involved a price averaging between 20 and 30 cents per barrel loaded aboard cars in the field.

East Texas operators who choses to produce and market excessive quantities of production in recent weeks because of a partial collapse of enforcement powers of the commission will profit two-fold from the shut-down. Their leases that have been badly depleted of reservoir pressure will regain a portion of their spent energy through the natural tendency of the field to quickly equalize in reservoir pressure when closed down. The low pressure areas are rejuvenated at the expense of nearby leases enjoying a higher pressure. Then those enjoying the benefit of almost unrestricted production profit again through the shut-down providing an opportunity to clear the spot market of most of its surplus stocks, with an improvement in spot oil prices a natural sequence.

Official pressure readings taken before and immediately after the suspension of production for 14 and a fraction days last December showed the average pressure in the field to have gained 27 pounds within that period.

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The Composite Catalog of Oilfield and Pipe Line Equipment, copy of which you either have or have immediately available, is a gold mine of information on equipment for drilling and producing oil. Hundreds of pieces of equipment are described in it in detail — and its Buyers Guide Section tells you the names and addresses of the manufacturers of practically every kind of equipment used in the oil and gas producing and pipe line business.

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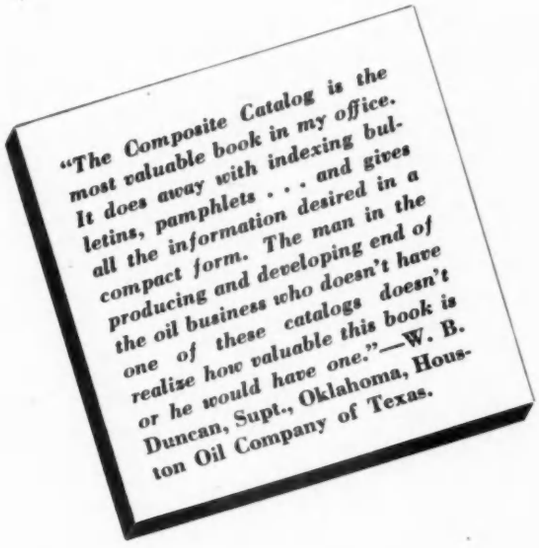
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THE GULF PUBLISHING COMPANY

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BOX 2811 — HOUSTON, TEXAS

Ames Approves *Roosevelt Policy;* *Expects* States to Cooperate

New York.—Effective carrying out of conclusions reached by President Roosevelt and sent to the governors of oil-producing states will be of great help to the petroleum industry, C. B. Ames, president of the American Petroleum Institute, declared in a formal statement April 4. Mr. Ames expressed confidence that the governors will cooperate. His statement follows:

"The President, in his letter to the governors of the oil-producing states transmitting the recommendations made to the Secretary of the Interior as the result of the three days conference held in Washington last week, has reached three conclusions which, if made effective, will be of great help to the petroleum industry.

"He states definitely that he is prepared to recommend to Congress legislation prohibiting the transportation in interstate and foreign commerce of any oil or the products thereof produced or manufactured in any state in violation of the laws thereof. If Congress promptly adopts this suggestion it will be of enormous value in the East Texas pool. For several months great quantities of unlawfully produced oil have been moving out of that field by rail. The Texas Railroad Commission has undertaken to stop it but the subject was beyond its jurisdiction. The railroads themselves have expressed a desire to stop it but have claimed that under federal law they were compelled to receive this oil and transport it in interstate commerce, notwithstanding the fact that it was unlawfully produced. When Congress acts favorably on this recommendation of the President, therefore, the federal government, the states, and 95 per cent of the industry will be united in the attack on the hot oil racket.

"There has been lack of cooperation between the Bureau of Internal Revenue and the tax collecting agencies of the states in connection with the gasoline tax. It has likewise been believed for sometime that several of the smaller pipe lines operating in the East Texas field have been evading the federal pipe line tax. The action of the President in instructing the tax collecting agencies of the government to cooperate with the states and with the law abiding elements in the industry in respect to these matters will be of great aid in the fight on gasoline tax evasion, and will, therefore, be helpful to the government, the states, and the legitimate elements of the industry.

"The third matter of great importance outlined by the President is his request to the governors to give special attention to those recommendations made by the Washington conference concerning matters beyond the jurisdiction of the President and in reference to which he expresses the hope that the governors 'of the states affected, after consultation with each other, will take appropriate action to meet' the emergency. The conservation of our oil resources is a problem which entirely disregards the boundaries of any one state. In the absence of federal control of production it is necessary, therefore, if we are to have a sound program, for the principal oil-producing states to treat each other in a neighborly way and cooperate towards the accomplishment of the common purpose. If the governors of these states and their respective regulatory bodies comply with the Persident's request to cooperate, as they doubtless will, we can look forward with confidence to greater progress in the conservation movement."

Oklahoman Introduces Bill To Divorce Pipe Lines

Washington, D. C.—Moving to put into effect that part of President Roosevelt's promise to the oil industry under which pipe lines would be separated from other branches of activity, Representative Wesley E. Disney of Oklahoma on April 5 introduced in Congress a bill divorcing pipe lines from other phases of the industry. Mr. Disney introduced a similar measure last session, on which no action was taken.

The bill would amend the Interstate Commerce Act to make it unlawful for any common carrier to transport any of its own products or any products which it owns or in which it has an interest, with the exception of lumber.

"Any possible monopoly of the petroleum industry must depend upon the power of pipe line companies to grant or refuse to individual producers transportation of oil," Congressman Disney explained. "It is at present within the power of great refining corporations to close all outlets to producers except on their own terms. Through the control of the only economic transportation agency, they are in a position to secure an unfair advantage over any possible competitors. Many companies controlling pipe lines make so large a profit on transporting oil that they can cut the prices on their own products below production costs of their competitors. This bill would eliminate this source of monopoly."

As a further move toward protection of the domestic industry, imposition of an embargo on imports of oil and its products until the end of next year is asked in a bill introduced by Representative Henry E. Stubbs of California. The measure provides for a flat prohibition of imports, carrying fines and imprisonment for violations of its restrictions.

Open Hearing of Texas Law For Independent Pipe Lines

Austin, Texas.—The House Committee on Oil, Gas and Mining will have an open hearing April 10 on a bill to allow creation of the Texas State Oil and Gas Conservation and Pipe Line Association. This is a measure designed to permit independent oil producers to form an organization under the aegis of the state for the purpose of building and operating pipe lines. The measure has been reported favorably by the senate.

Electrical Association Meets At Tulsa April 13-15

Tulsa, Okla.—The sixth annual convention of the Petroleum Industry Electrical Association will be held here April 13, 14 and 15, according to H. E. Browne, Sinclair Prairie Pipe Line Company, Independence, Kansas, secretary-treasurer. The Mayo Hotel has been selected as convention headquarters, and a number of manufacturers of electrical equipment will display their wares on new products used in the communication facilities of oil and gas companies. R. M. Bayless, Humble Pipe Line Company, Houston, is president of the organization. Nearly all the leading oil and gas pipe line companies operating in the southwest and middlewest are carrying memberships in the association.

Oklahoma City Shut-Down May Draw East Texas Oil

Tyler, Texas.—Suspension of production in the Oklahoma City field on April 5 furnished a cue for brokers of spot crude oil in the East Texas field to try and book contracts for supplying independent refineries at Oklahoma City and other Oklahoma points with a substitute supply of high gravity oil.

A freight rate of 16½ cents per 100 pounds, or 51.282 cents per barrel, applies on crude moving in tank car lots from East Texas loading racks to Oklahoma City when routed via Fort Smith & Western Railway. A heavy interstate movement via rail is anticipated should Oklahoma's banner field remain inactive over any appreciable period.

Coring Slowed Down in Deep Kettleman Well

Coalinga, Calif.—A very hard and tough limestone shell in North Kettleman Oil and Gas Company's Lillis-Welch 1, outpost test northwest of Kettleman Hills, has reduced coring speed, but the drill pipe and equipment are withstanding the strain in the face of rapid changes of bits. The three-inch drill pipe is very flexible, as would be expected of any string of hollow steel so long, but the power from the surface is being transmitted to the bit with little trouble. The well has been drilled to 10,270 feet, and now stands just short of the American record. An effort will be made to drill the well to around 11,000 feet.

Standard Oil Company is the most active operator on the North Dome, with six drilling wells. This company expects to develop its holdings at steady rate, and hopes to avoid competitive drilling on a large scale. It holds more than 50 per cent of the proven acreage in the field, but has been a leader in the movement to drill as few wells as possible.

Two wells in the Huffman area will be completed soon. They are Superior Oil Company's Huffman 6, now drilling in the Temblor formation at 8000 feet, and Union Oil Company's King 3, which is drilling below the last water shutoff at 7725 feet. The former will be the fifth well to be drilled on a 160-acre lease, while the latter will be the third well on a quarter section to the southwest.

Drawing of a "brown" line to replace the "blue" line around the North Dome has caused some discontent among owners of edge leases. All land inside the outer blue line formerly profited with other leases in the unit plan of operation, but the revised brown line embraces a smaller area and naturally throws out much of the land inside the blue line. This simply means that much of the extreme outside acreage will not be recognized longer as productive.

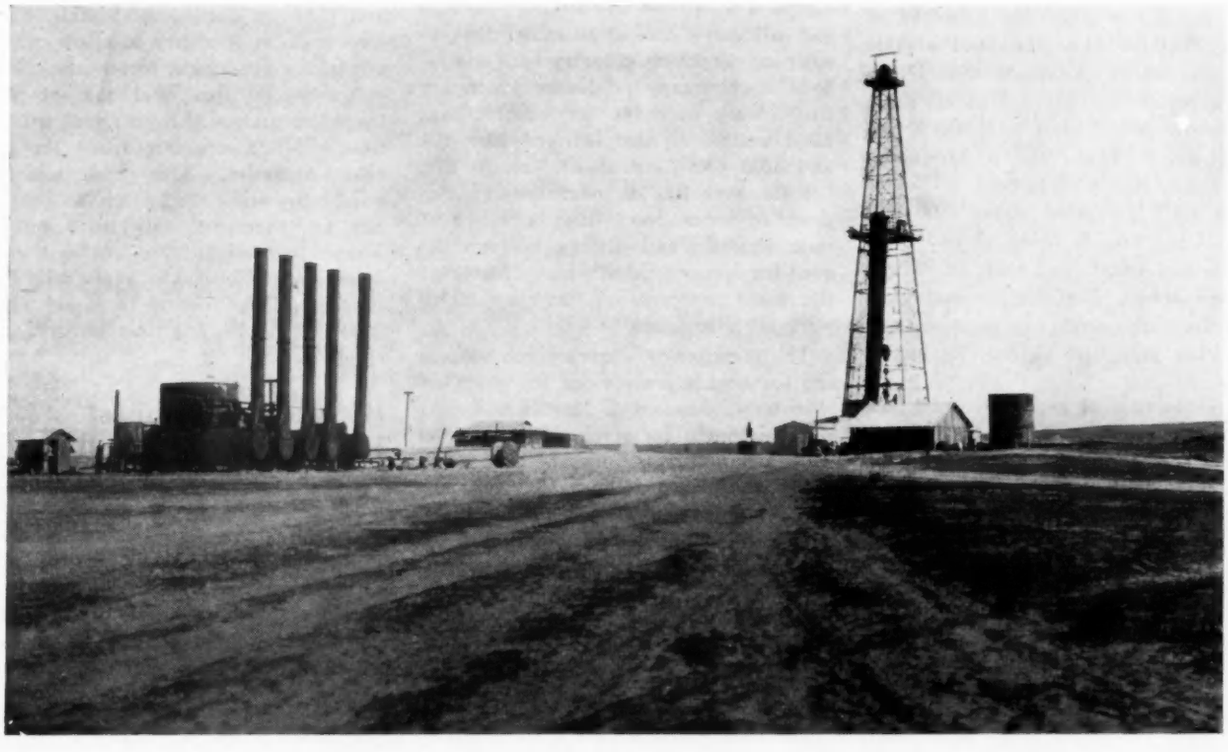
Lost Hills Extension Test Anticipates Water

Bakersfield, Cal.—Associated Oil Company has not actually cored a water zone in Williamson 1, Lost Hills extension test, but presence of increased salt content in the drilling mud indicates that such strata have been cut between coring operations. High pressure drilling equipment has been installed for handling any water flow which may ensue. Absence of water formations in this well would be a disappointment. All other deep wells drilled nearer the center of the shallow producing zones showed water in large quantities. Loss of circulation was common, and the one well which finally drilled through the troublesome strata did so at great expense. The cost of drilling mud alone was greater than the total cost of drilling shallow wells of a few years ago.

Williamson 1 is now drilling in a hard brown shale at 3223 feet. Progress below the 22-inch shut-off at 1996 feet has been good. The well is located northwest of the heavily developed shallow zones and is considered a very important deep test. Plans for drilling to around 10,000 feet will be considered, if nothing commercial is found above 7000 feet. Although three or four wells have been drilled below the main producing formation, definite classification of the formations around and below 5000 feet have not been made. The small amount of oil developed around 5100 feet was significant, but there is some doubt as to the identity of this zone.

To Build Steel Island For Test in Pacific

Santa Barbara, Calif. — Plans for building an island in the Pacific Ocean to test a tideland permit off Coal Oil Point have been drawn by Doyle Petroleum Corporation, and a third well



North Kettleman Oil & Gas Company's Lillis-Welsh 1, extension location on the North Dome at Kettleman Hills; it has passed 10,264 feet.

may be drilled on this submerged structure. The island will be built chiefly of steel, but its construction will differ considerably from that used for building another island down the coast.

Ocean drilling without approaches of any kind from the mainland are novelties in California, and the rate at which the depth of the water increases prohibits drilling beyond a certain boundary near shore. The cost of building long piers has been greater than the cost of the well foundations. Elimination of these long approaches will naturally remove the greater part of the cost in most instances.

Doyle Petroleum Corporation is already drilling off Coal Oil Point along a pier built some time ago by Bolsa Chica Oil Corporation. Plans for building an isolated island and testing another state tideland permit will depend largely upon the action of the War Department and local sentiment. Coal Oil Point is only a short distance from Elwood, but the structure is not directly connected to the proven field.

Deeper Zones Not Good for Rincon Offshore Test

Ventura, Calif.—After making an unusually good showing in the shallow zone around 2000 feet, Indian Petroleum Corporation's Permit 82-2, tideland test near the Rincon field, is not looking so promising below 3000 feet as the company had expected. The main producing zone was expected at about 2500 feet, but the sand at this level was not up to expectations. Deeper drilling showed streaks of oil sand, and below 3000 feet a hard shell was encountered. Hope for a producing zone below this shell is held.

The well is located about 2800 feet from shore, and is being drilled on a steel island which was built in 38 feet of open ocean. Preliminary geological work indicated that the location was higher on structure than wells nearer shore.

A production of more than 100 barrels was obtained at 2089 feet, and such a yield seemed to assure the company of a good well in the main producing zone. Deeper drilling was a distinct disappointment. Streaks of gray sand were cored, but these strata were not necessarily a dangerous indication.

A successful completion at this point would extend the field about 1800 feet and would pave the way for additional ocean drilling. The mainland wells are admittedly on the end of the field, and the structure rises toward the deeper water. There is some doubt as to the extent of the accumulation, however.

Development to Be Slow In San Miguelito Field

Ventura, Calif.—Development of the new San Miguelito field will be slow at best, and the three wells now being drilled to extend the producing area should not start a long series of offsets, even in the case of unanimous success. The discovery well was first completed at 6750 feet, and produced from that depth for some time. It was deepened last year to 7100 feet and recompleted with an initial flow of 2500 barrels. The field immediately became recognized as a large potential producer, and the shallower producing zone was no longer used as a basis for measuring future calculations.

Chanslor-Canfield Midway Oil Company, Continental Oil Company and Honolulu Consolidated Oil Company are each drilling one well as extension tests, but they should unofficially be classed as being located in the field. The structure may prove to be small, as outcrops near the apex show a sharp folding.

Chanslor-Canfield Midway Oil Company completed the first well at 7800 feet, after drilling to 10,030 feet and plugging back to test shallower showings.

Water Obstacle to Long Beach Deepening Program

Long Beach, Calif.—Difficulty in securing good water shutoffs around 5000 feet has influenced several operators here to postpone deepening, plugging back and reconditioning many producers which are dangerously near the unprofitable line. Most wells completed between 4800 feet and 5200 feet have shown enough life, but the zone has definitely offered evidence of water strata. It is believed that poor shutoffs, and drilling through the zone for deeper production have increased the water content of a formation which normally might be dry.

The question of financing reconditioning has been a serious one for operators who have questionable locations. Leases may be bought for nominal amounts, but most of the tracts for sale have small wells which have declined to a very low level. Many small wells in the northwest sector will bail or pump enough oil to run the boilers, but their operation is unprofitable.

A gradual increase in the percentage of water produced by edge leases has added to the difficulties of several companies. Unfortunately these edge wells stand little chance in the deeper or shallower zones. Water has caused some trouble on inside leases, but the field is still the leader in the Los Angeles basin.

Shallower Zones to Be Drilled at Huntington

Huntington Beach, Calif. — Former ambitious plans to develop a very deep producing zone at Huntington Beach have practiaclly vanished, and most of the drilling in the immediate future will be confined to the shallower zones. Little work of any kind is expected. Drilling of several wells to 7000, 8000 and even 9000 feet resulted in outright abandonment of almost every effort. A small amount of oil was developed around 7000 feet, but the streaks of oil sand cored at various levels below 5000 feet failed to result in commercial production.

Cable Tools Used Again For Mount Poso Drilling

Bakersfield, Calif.—Use of cable tools in the Mt. Poso field should give this old drilling method a chance to show its merit. E. R. Richter is using a standard outfit in his first effort in the field, and sponsors of the undertaking think the method will prove successful.

Mt. Poso field is a shallow producing area, and pressures are low. Use of rotary outfits has been entirely satisfactory, but belief that the low pressure formations should not be polluted has long been held. Careful drilling with cable tools may prove beneficial, and the practice would in no way question the value of rotary methods in deeper fields. Mt. Poso oil is heavy and frothy, and the low pressures existing might have a slight tendency to allow mud to affect the producing formation.

Activity in this field has increased since the first of the year, but production will not seriously affect the general oil market. This crude makes a good lubricating stock, and the gasoline has an excellent anti-knock quality. These two advantages make the oil much more desirable than might be suspected. Production is found above 2000 feet, and wells may be drilled at small cost.

Richfield Northeast Extension Gets Well

Los Angeles.—Completion of a small flowing well in the northeast extension at Richfield has done much to offset failure of another well in the area. Otis Hoyt completed Bertram 15 at 3766 feet, with an initial production of 250 barrels of clean oil. The oil is 29 gravity, and shows a cut of one-tenth of one per cent.

The size of the well is far less important than the fact that a commercial flow of clean oil was obtained. The gas flow was very small, but hanging

the tubing near bottom probably lowered the gas-oil ratio.

The extension is nothing more than a part of the field which has had little development. Several years ago an effort was made to complete wells in this section at about 3700 feet. High pressures were developed, but the gas volume was small. Two or three small wells have been completed during the past few months, but major operators have not rushed in to drill offsets. The Texas Company drilled Steiner 3 to 4232 feet, but shut down the well and may abandon it soon. The extension seems spotted, and drilling is perhaps more difficult than in many Los Angeles basin fields.

California Permits Ahead of Last Year

Los Angeles.—Total permits issued for new wells in California is forging ahead of the total at the same time last year, but the number is still small when compared with the same period four or five years ago. Six permits were granted during the past week, bringing the year's total to 66, as compared with 58 at the same time last year. Only the Fruitvale field drew more than a single new well, and this field showed two permits for the week. New wells follow:

McClurken, Taylor and Stanford's Etchechury 1, Section 28-29-27, in the Fruitvale field.

J. Burris Mitchel's No. 2, Section 6-28-29, in the Round Mountain field.

N. P. Gerard's No. 1, Section 21-29-27, at Fruitvale.

Dil-Harp Oil Company's Dil-Harp 1, Section 25-24-26, in Tulare County.

Emerich Oil Corporation's Mason 1, Section 35-13-13, in Fresno County.

Standard Oil Company's No. 4, Section 29-21-17, on the North Dome at Kettleman Hills.

California Completes Two Commercial Wells

Los Angeles. — Of the three wells completed during the week in California, one was a wildcat abandonment of little standing, one a good well at Ventura Avenue. and a third a good shallow producer at Long Beach.

Company, Well and Location	Init. Prod. Bbls.	Depth
Long Beach—		
West American Oil Co., No.		
West American Oil Co., No. 9.	500	4932
Fred J. Garliepp, No. 1, 14-3-16	*	1090
Ventura Avenue—		
Associated Oil Co., Lloyd 130 2200		7900

*Failures. †Junked. ¶Million cu. ft. gas.

Three Isolated Wildcats Watched in California

Los Angeles. — Several California wildcats are nearing interesting depths, and the next few weeks should show something of the nature of formations which are the objectives in a number of tests. A few of the most important wildcats are near proven fields, but at least three remote tests are being watched closely. Little change was noted in the number of active tests, and the few wells that fell into the idle class were offset by resumption of operations in other projects.

At Bena, in Kern County, Caravel Petroleum Corporation's Tejon 1, Section 19-30-30, is installing a heavier rotary outfit at 110 feet.

Near Caliente Creek, A. T. Jergins Trust's Nissen 1, Section 20-30-30, is drilling in hard shale at 1800 feet.

Near Lost Hills, Associated Oil Company's Williamson 1, Section 2-26-20, is drilling in hard shale at 3200 feet after installing equipment for drilling under pressure in the high pressure water zones.

At McKittrick, General Petroleum Corporation's Lovitt 1, Section 10-30-21, is a new location. T. H. T. Purman's No. 1, Section 22-29-21, is standing cemented at 5385 feet, but no plans have been made for drilling out.

In the Semitropic district, Inland Pacific Oil Company's No. 1, Section 29-25-21, is installing equipment for a valley test.

At Weed Patch, Dana Hogan's Wharton 1, Section 32-30-29, is drilling in sandy shale at 4528 feet. Mohawk Petroleum Company's Hood 1, Section 30-30-29, is drilling in hard shale at 5235 feet.

Santa Barbara County

Off Coal Oil Point, Doyle Petroleum Company's Campbell 1, an ocean test, is drilling in hard brown shale at 1800 feet.

Near Lompoc, K. L. Listle's No. 1, Section 33-8-34, is a new location. Meganos Oil Company's No. 1, Section 28-8-34, is a location. W. E. Smith's B-1, Section 18-7-34, is drilling in brown shale at 1435 feet.

At Naples' Snow and Tower's Naples 1, Section 7-4-29, is idle at 5669 feet.

Ventura County

At Conejo, International Oil Producers' Powell 1, Section 33-2-20, is drilling in volcanics at 2785 feet.

Near Los Posas, Los Posas Petroleum Company's Mahan 1, Section 22-3-20, is drilling in hard shale at 3500 feet.

At Ojai, Midlands Oil Company's Canet 1, is drilling in streaks of hard brown shale at 5715 feet.

Near the Rincon field, Woodrow Petroleum Company's Woodrow 1, Section 4-3-24, is drilling in hard shale at 6815 feet.

In the San Miguelito extension, Chanslor-Canfield Midway Oil Company's Hobson A-3, Section 23-3-24, will cement 18-inch casing at 900 feet. Continental Oil Company's Grubb 2, Section 23-3-24, is drilling in shale at 2135 feet. Honolulu Consolidated Oil Company's Valenzuela 1, Section 23-3-24, is fishing for drill collar and bit at 5213 feet after drilling through hard shale.

At Sespe, H. A. Ivars' Star 7, Section 1-4-20, is reaming at 1865 feet. Merchants Petroleum Company's Cochran 6, Section 1-4-20, will be tested on the pump at 750 feet after flowing water and some oil.

At Simi, C. L. Anderson's Marr 12, Section 36-3-18, is drilling in hard brown shale at 1000 feet.

Miscellaneous

In Butte County, Buttes Oilfields' No. 2, Section 35-16-1, is a location.

In Fresno County, Bergman Oil Company's Loma 1, Section 12-12-11, is showing oil and gas at 3365 feet. Emerich Oil Company's Mason 1, Section 35-13-13, is a location. Graham-Loftus Oil Corporation's Oliver 1, Section 20-15-18, is drilling in hard shale at 3950 feet. North Kettleman Oil and Gas Company's Lillis-Welsh 1, Section 24-21-16, is drilling shale at 10,264 feet.

In Glenn County, Tehama Petroleum Company's No. 1, Section 4-22-5, is drilling in hard shale at 3210 feet.

In Kings County, Kettleman Reef Ridge Oil Company's No. 2, Section 10-23-19, is drilling in gravel at 265 feet. Knudsen and Schmidt's Avenal 1, Section 36-23-17, is fishing for drill collar at 6854 feet. Kettleman City Oil and Gas Company's No. 2, Section 10-23-19, is standing cemented at 307 feet.

In San Luis Obispo County, Shell Oil Company's Mahoney 1, Section 4-25-12, is drilling in hard sand at 5675 feet.

In Tulare County, Dil-Harp Oil Company's Richgrove 1, Section 25-24-26, is rigging rotary after spudding and drilling a few feet.

Southern California

At Calabasas, Alpha Oil Company's Trudell 1, Section 22-1-18, is awaiting rig repairs at 500 feet.

Near Hermosa Beach, Corniel Oil

Corporation's No. 1, Section 31-3-14, is drilling in shale at 3855 feet.

Near Lynwood, William L. Jones' Graham 1, Section 31-2-12, is cleaning out at 4750 feet after drilling to 4980 feet.

In the Newhall district, Fred J. Garliepp's No. 1, Section 14-3-16, is being abandoned at 1090 feet. Hudson Petroleum Company's Alexander 1, Section 1-3-16, is drilling in hard shale at 1310 feet.

At Newport Beach, Nuoil Company's Banning 3, Section 29-6-10, is fishing for drill pipe at 3850 feet.

At Placentia, Placentia Development Company's Verde 1, Section 33-3-9, is rigging rotary for extension test near Richfield.

At Saugus, Willetts Petroleum Company's Walker 1, Section 35-5-16, is installing mud pump at 1900 feet after a gas blowout.

In the Wilmington district, Pacific Oil Investment Company's Lupie 1, Section 28-4-13, is cleaning out at 3618 feet for a production test. Wilmington Terminal Oil Company's Banning 1, Section 28-4-13, is drilling in shale and oil sand at 3390 feet and may make a test of the shallow showings.

In Riverside County, Harry J. Keeley's Damron 1, Section 21-4-6, is drilling in hard shale at 600 feet.

In San Bernardino County, Great American Petroleum Company's Gapco 1, Section 12-2-8, is drilling in hard shale at 1800 feet.

Part of New Phillips Line Is Now Operating

Tulsa.—Excellent progress is being made on Phillips Petroleum Company's eight-inch welded oil line from the Oklahoma City pool to Thrall Station, Kansas, a distance of approximately 210 miles. On April 4 the line was completed to a point about five miles north of the Kansas-Oklahoma line and was in operation between the Oklahoma City pool and Burbank. Construction crews had completed six miles of line ahead of the completed section leaving about 50 miles yet to be constructed. At the same time crews were working on two eight-inch loops between Thrall Station and Kansas City. According to the original announcement this section of the system was to be expanded by the addition of one six-inch loop.

The Phillips company met its problem of moving considerably more than the usual amount of oil from the Oklahoma City pool by putting in temporary booster stations at Oklahoma City, Jones, Agra, and Yale, moving oil first from the Oklahoma City pool to Yale and later to Burbank when that section of the line was completed. Permanent stations are being constructed at Oklahoma City, Yale, Burbank, and Howard, Kansas, intervals of about 50 miles each. Construction work on the initial station at Oklahoma City was well under way but the company will not rush this phase of the system since it can handle requirements by use of temporary stations.

The Oklahoma City station, which is located about two miles east of the city limits on Reno Avenue, will consist of five units, two of which will pump to Earlsboro in the Seminole district and three to Thrall by way of Yale, Burbank, and Howard. Each unit includes a Bruce-McBeth gas engine, a Farrel step up gear and a six-inch four-stage Goulds centrifugal pump. Engines will run at 277 r.p.m. and pumps at 2900 r.p.m. According to present plans 22 units will be installed in the four main line stations. Definite plans have not been announced regarding type of engines to be used in the stations other than at Oklahoma City, but it is understood that Rathbun-Jones gas engines will be used at Burbank. All equipment in the system excepting engines at Oklahoma City, will be new.

Sinclair Pipe Line Transfer Biggest Labor Job in Sight

Tulsa.—Removal of about 140 miles of 12-inch pipe line by Sinclair Prairie Pipe Line Company between McCloud Junction near Oklahoma City, and Coffeyville, Kansas, to Texas so as to extend its East Texas-Mexia 12-inch unit on to Houston will create more labor demand during the summer months than any single oil industry project in the Southwest. Announcement regarding this pipe line project was published last week, and the awarding of contracts for the work will likely be made within a week or two. It is reported that more than 15 pipe line contractors submitted bids last week.

The McCloud-Coffeyville unit will be stripped of its soil covering, and cut in 40-foot lengths, eliminating original joint welds, then shipped by rail to Texas. It is estimated that about 500 cars will be required to move the pipe and contractors equipment.

The company has adequate line facilities between Oklahoma City and Coffeyville without the line to be transported to Texas.

Oklahoma City Wells Shut In by Commission

Oklahoma City.—Effective at 7:00 a. m., Wednesday, April 5, all wells in the Oklahoma City pool, except those producing 10 per cent or more water, were shut in under orders of the Oklahoma Corporation Commission. The first order, signed on March 31 and made effective at 7:00 a. m. the following morning, dealt with wells producing from the Wilcox sand zone. At the insistence of many operators the order was extended, effective at 7:00 a. m., April 5, to include all wells in the pool except those producing 10 per cent or more water. Action of the commission followed the taking of testimony earlier in the week when it was shown that gas and gas energy was being wasted at an alarming rate, that many producers were greatly exceeding their allowables, and that by reason of the conditions great danger of loss of life and property existed.

The commission pointed out that there is now pending in the legislature, a proposed law in the stages of final passage, which, if enacted, will provide adequate machinery for quickly taking the gauges or potentials of the wells in the field. The administration proration bill is expected to receive favorable action during the present week, especially since the commission has announced that the Oklahoma City pool will not be reopened until potentials have been taken. At the time the order was signed it appeared that the proration bill would be enacted into law within a few days and the commission planned on the immediate commencement of potential gauges. Subsequently the house refused to accept amendments inserted by the senate and the bill was returned to a joint committee. The fight apparently boils down to that section of the bill which provides that the new proration organization be appointed by the corporation commission and confirmed by the senate. While several sections of the bill are objectionable from the viewpoint of the oil industry, it is understood to meet with general approval of the oil companies which have come to the realization that proration cannot be enforced under the present toothless law. So far as the legislature is concerned the fight appears to be solely on the basis of patronage, which has been the stumbling block for practically all legislation of importance during the fourteenth session.

Proration Status Seminole District as of April 1, 1933

Pools—	Feb. Allowed Pipe Line Runs	Feb. Actual Pipe Line Runs	April Potential	April Net Allowed Pipe Line Runs
Allen	215,756	217,109	17,974	204,757
West Asher-Wanette	88,926	75,129	7,336	85,490
Bowlegs	287,377	291,293	24,786	266,144
Carr City	232,795	232,870	20,273	219,645
Earlsboro	288,707	285,050	23,297	287,922
East Earlsboro	185,767	184,902	16,354	175,894
East Earlsboro Extension	9,948	10,880	1,041	10,468
South Earlsboro	48,302	47,820	4,840	53,683
Earlsboro Townsite	27,115	28,340	2,226	26,010
Fish	71,745	71,037	34,770	75,708
Konawa	84,106	84,418	7,670	75,787
West Konawa	33,913	20,287	1,286	25,620
Little River	443,633	451,984	38,733	418,594
East Little River	37,470	32,745	2,913	33,950
Maud	23,548	20,370	1,331	24,027
Mission	166,590	160,608	14,149	155,503
Sasakwa	38,269	33,292	2,214	34,014
Searight	79,002	77,193	5,481	75,704
Seminole	274,325	284,144	23,081	255,354
East Seminole	24,624	24,592	2,076	24,579
West Seminole	258,969	217,302	16,404	179,625
St. Louis	492,858	467,132	38,117	493,614
East Earlsboro Calvin	11,900	9,374	9,927	30,900
Wewoka Townsite	49,182	43,060	3,513	45,000
Strippers	131,068	131,068	4,824	144,720
Total	3,605,895	3,501,999	324,616	3,422,712

Note—For comparison with March see page 42, March 6.

April Nominations Below Allowed March Output

Seminole, Oklahoma.—Under new orders by the state proration umpire, purchasers in the Seminole district will be allowed to take 3,422,712 barrels during April, a daily average of 114,090 barrels. Compared to the previous month, when total net allowed pipe line runs were 3,879,115 barrels, a daily average of 125,133 barrels, the decline in demand is 456,403 barrels, or a daily weighted average of 11,043 barrels. During February purchasers took a total of 3,501,999 barrels, failing by 103,986 barrels to run the net allowed. The new figures show a decline of 1135 barrels in daily potential, West Asher sustaining a loss of 480 barrels; Konawa, a loss of 106 barrels; West Konawa, a loss of 1374 barrels; Little River, a gain of 32 barrels, Maude, a gain of 45 barrels; Mission, a gain of 98 barrels; Sasakwa, a gain of 10 barrels; West Seminole, an upward adjustment of one barrel; Fish, a gain of 30 barrels; St. Louis, a gain of 481 barrels due to new wells in the eastern and western portions; and a gain of 128 barrels in stripper potential.

Review of the current drilling report from the general Seminole district shows a total of 99 operations, of which 56 are drilling, rigging up, or waiting on cement to set on casing. Pontotoc County leads activities with three locations, four rigs, 15 drilling wells, and four tests shut down, a total of 26 operations.

Proration status of the Seminole district as of April 1 is shown in the accompanying table.

Spurt Is Registered in Oklahoma Field Results

Tulsa.—New production in Oklahoma during the past week climbed to a point far in excess of any reached in several months when six Oklahoma City completions brought the total to 77,023 barrels from 15 producing wells. Total footage included 71,810 feet in new hole and 811 feet in old wells deepened, or 72,621 feet compared to 51,697 feet for completions of the preceeding week.

The completions list shows in addition to the 15 producers, five dry holes and one abandoned location.

Shell Petroleum Corporation's, Sebronik 6, SE SW NE, Section 30-19n-4w, in the Roxana pool of Logan County, was a dry hole of importance. This well was originally completed at 6042 feet in Upper Simpson. Drilled deeper during the past few weeks it found all of the lower Simpson formations, including Wilcox sand, dry and penetrated Arbuckle limestone from 6570 to 6608 feet. It is three locations north of the company's McCully 6, which was recompleted in what is thought to be School Land sand of the Oklahoma City type section at 6171 to 6173 feet, from which depth it made 1115 barrels initially. Two other old wells in the immediate vicinity have been deepened to the same sand and recompleted for nice production. Failure of Sebronik 6 to find anything of importance is a considerable disappointment.

Company, Well and Location	Init. Prod. Bbls.	Depth
Carter County—		
George Pace, W. Mitchell 2, sw nw nw 30-1s-2w	40	2310
Creek County—		
Whittington & Page, Webb 1, nw ne se 26-17n-11e	*	2615
Westfall et al, Baunsen 1, ne se nw 3-18n-8e	*	2640
Swift et al, King 1-A, ne nw sw 7-18n-10e	216	2352
Lincoln County—		
Pure Oil, Myers 1, 660 feet from south line and 85 feet from east line of lot 7, nw 1-15n-6e	40	3739
Stanolind O&G, Bower 2, se ne sw 1-15n-6e	lcn.	abd.
Oklahoma County—		
Phillips Pet., Beaty 1, sw nw nw se 22-11n-3w	¶26-15,576	6581
Phillips Pet., Beauchamp 1, ne nw sw se 22-11n-3w	¶65-16,554	6555
Phillips Pet., Cordia 1, sw nw ne se 22-11n-3w	¶66-8250	6591
Phillips Pet., Stamper 1, nw sw ne se 22-11n-3w	¶28-6444	6515
Phillips Pet., Wallace 1, se nw se se 22-11n-3w	¶65-16,128	6538
Phillips Pet., Wooley 1, sw se sw ne 22-11n-3w	¶39-8568	6535
Okmulgee County—		
Trail et al, Arnold 1-A, swc se 26-16n-11e	*	2816
Osage County—		
Elfred Beck et al, 1, se sw se 13-24n-7e (owdd)	22	2800
Pottawatomie County—		
Gypsy et al, Tenwas 1, cse se nw 25-6n-4e	524	3481
Seminole County—		
Gypsy Oil, M. Rentie 1, sw se se 8-9n-6e	2304	4247
Carter et al, Comm. Keokuk Falls 1, cn½ nw ne 2-10n-6e	2327	4106
Stephens County—		
George Pace, Baker 1, nw ne nw 35-2s-6w	*	2068
Wagoner County—		
Dunbar, Grayson 1, nw ne sw 22-18n-15e	10	1057
J. E. Martin, Drew 2, se sw ne 26-18n-15e (formerly rep. cel sw ne)	20	1064

*Failures. †Junked. ¶Million cu. ft. gas.

Oklahoma Permits Reflect Pick-Up in Field Work

Tulsa.—New work in Oklahoma maintained a pick-up established during the week ending April 1, with a total of 21 first reports during the current week.

While reports of the past few weeks have shown a comfortable increase, general conditions in the industry continue to hold back any spurt in activity. It is, however, being freely predicted that many Oklahoma areas are due to receive attention as soon as the crude oil situation can be straightened out. Much depends

upon the proration bill now pending before the legislature.

In Creek County, O. O. Owens plugged its S. Hope 1, NWc Section 23-15n-7e, back to sand at 1850 to 1870 feet which had a show of oil, from the total depth of 3998 feet which had a hole full of water. Central Commercial's R. Tucker 3, SE SW SW Section 17-19n-9e, had its machine on ground. Shaffer et al were spudding on their Lalley 1-A, SE SE NE Section 7-18n-11e.

Five first reports and two corrections were on the list for Hughes County as follows: Dixie Lee's Taylor 1, CNW NW Section 32-5n-10e, machine; Mid-Continent Petroleum's J. Bruner 2, CSE NW SE Section 9-7n-8e, cellar; Buchner's Chapman 2, SW SW SE SE Section 10-7n-8e, machine; Redman et al's Long 1, SE SE SW SW Section 10-7n-8e, rig up to deepen from old total depth of 2930 feet; Pringle and Marshall's Whitley 1, SWC SE Section 29-8n-9e, rig on ground; Nash Redwine's Badger 1, CW½ SW SW Section 4-5n-11e, spudded and shut down, formerly reported CNW NW; Correction—Sunray et al's Jacobs 1, CSW NW NW Section 15-7n-8e, drilling below 2000 feet, formerly reported Robinson-Hicks' Jacobs 3.

In Logan County, Gypsy Oil and Carter Oil announced the location of their McConnell 1, CNE SE Section 28-17n-4w.

In Noble County, Mid-Co Oil Corporation announced the deepening of its Brumfield 1, NE C SW Section 15-23n-2w, cleaning out at old depth of 2670 feet, and of its Brumfield 16, NW SE SW Section 15-23n-2w, building rig to deepen from 2651 feet.

In Okfuskee County, Prince & Anderson had machine up for their Likowski 1-A, CSL SE NW Section 23-11n-11e.

In Okmulgee County, J. A. Hull's Tiger 1-A, SE C SW Section 34-13n-12e, was a location. Correction—W. B. Pine, Adams 1-A, NW NW NE Section 6-14n-12e, drilling below 1500 feet, was formerly reported NE C NW.

In Osage County, Buell and Indian Territory Illuminating Oil Company's No. 1, CEL SE Section 29-23n-9e, was a machine.

In Payne County, Deep Rock and Continental were rigging up to drill deeper on their G. E. Hawk 5, SW NW NE Section 9-18n-5e, from 2651 feet.

Two corrections were listed for wells in Pottawatomie County: Branson's Brandenburg 1, SW NE SW Section 3-7n-4e, a location, formerly was reported Head et al, Brandenburg. Oklahoma Oil Corporation's Swan 1, SE SW SE Section 36-7n-4e, drilling below 2100 feet, formerly was reported Reynolds et al Swan 1.

In Seminole County, Carter Oil and others were rigging up rotary on their Canard 1, CS½ SW SE Section 35-11n-6e.

In Stephens County, George Pace's Watkins "B" 6, 210 feet west of CNW SW Section 22-2s-7w, was a location. Hobbs et al were rigging up rotary on their Burnett 1, SE SW NE Section 32-5s-5w.

Three first reports were made for Tulsa County, Boyd's Daniels 2-A, NE SE NW Section 23-18n-14e, drilling below 409 feet; Baker's Barnes 1, SE SW NW Section 26-19n-11e, drilling below 750 feet, and C. R. Fortner et al's Partridge 1, SE C SW Section 32-19n-11e, rigged up and shut down.

Seminole Geophysical Find Flows 2173 Barrels Initial

Tulsa.—Latest reports show Stanolind Oil & Gas Company and Indian Territory Illuminating Oil Company's Palmer 1, NWc Section 36-6n-7e, flowing 2173 barrels in 24 hours partly pinched through surface connections. Total depth of this important wildcat find is now 4051 feet in Wilcox sand topped at 4040 feet. Production is coming from Upper Simpson at 3900 to 3909 feet where the well was good for slightly over 800 barrels, and from the Wilcox sand. Pay in the lower bed was reported from 4047 to 4051 feet, the upper seven feet of sand having been found dry. Operators shut in during the week and obtained bottom hole pressure reading of 1650 pounds. With the present Wilcox sand penetration of 11 feet, only four of which is reported to be productive, the new well seems capable of doing better than 2500 barrels on natural flow. Location is approximately a half-mile north of the town of Sasakwa and slightly over two miles south of the old Sasakwa pool in southeastern Seminole County. The test is said to have been drilled on a seismograph "high" one of the few Oklahoma geophysical structures which have not been found barren when tested.

In Kay County, Blauner et al's Maple 1, NE NW SE Section 20-27n-4e, was spudded in and shut down.

In Alfalfa County, Acre et al's Acre 1, CSW NE Section 14-24n-11w, was cleaned out to its old total depth of 5502 feet and shut down.

Continental Oil Company's Thompson 1, NW SW SW Section 7-24n-4w, Garfield County, had Oread at 3305 feet, Tonkawa at 3867 to 3885 feet, Layton at 4387 feet and was drilling below 4918 feet.

Reports on the Noble County semi-wildcat tests were as follows: Shell Petroleum Corporation et al's Whitton 1, CSE SE Section 7-20n-2w, was drilling below 2935 feet; Sinclair Prairie Oil Company's Jerome 1, SWC Section 15-20n-2w, was drilling below 4575 feet; Stanolind Oil & Gas Company and Continental Oil Company's Bolay 1, CSW NW Section 16-20n-2w, had upper Layton at 3930 to 4090 feet, lower Layton from 4128 to 4180 feet, and is now fishing at 4490 feet; Shell et al were drilling below 2400 feet on Farr 1, CNE NE Section 19-20n-2w.

Two new tests were announced in Logan County, Gypsy Oil Company et al's McConnell 1, CNE SE Section 28-17n-4w, a location, and Shell Petroleum Corporation et al's Faulkner 1, CSE NW Section 11-15n-4w, building rig.

Kemp-Nunnelee's Crane 1, in Payne County, SW SE SW Section 10-17n-6e, had rig up.

In Okfuskee County, National Investors Company's Billy 1-A, SE NW NW Section 29-12n-9e, about two miles north of Castle, had a hole full of water in sand at 1100 to 1150 feet and was drilling below 1218 feet.

In Seminole County, reports on the two tests being made as a result of successful completion of Carter Oil Company's Community - Keokuk 1, CN½ NW NE Section 2-10n-6e, which flowed 1810 barrels in 24 hours through four-inch tubing, were as follows: Carter Oil Company's Community-Canard 1, CS½ SW SE Section 35-11n-6e, north offset to Community-Keokuk, was rigging up. Barnsdall Oil Company's Deere 1, SW NW NW Section 36-11n-6e, approximately a half-mile east and three-fourths of a mile north of the discovery well, had Wewoka at 2440 feet, Oswego at 2640 feet, Calvin at 2790 feet, and was drilling below 3104 feet.

The Caddo County test of Denver Producing & Refining Company, Noe 1, NW SW SW Section 34-10n-10w, was drilling below 6800 feet.

In Kiowa County, McWhirter et al's Vanderneck 1, NE NE NW Section 3-7n-19w, was still shut down at 2035 feet, and Christian's James 1, NE SE Section 8-7n-18w, was shut down for casing at 1702 feet.

In southern Seminole County, Donley et al's Shepard 1-B, SE SE NE Section 4-8n-8e, which has been fishing tools at 1640 feet since the first part of January of this year, was shut down at 1640 after having lost the

tools. The semi-wildcat test of Felmlee et al, Bowlegs 1, SE NE SW Section 1-7n-7e, was shut down at 210 feet. Harris-Haynes Harjo 1, NE SE NW Section 11-6n-6e, which made an estimated 1,000,000 cubic feet of gas with a small show of oil after being plugged back to 2801 from 2910 feet and shot with 25 quarts, was running tubing to test on flow.

In Hughes County, Nash Redwine's Ellis 1, CNW NW Section 9-5n-11e, had a hole full of water in sand at 895 to 932 feet, set six-inch at 1000 feet and was drilling below 1225 feet.

Reports on tests in Pontotoc County were as follows: Blackwell Oil & Gas Company's Abbott 1, NW SW NE Section 14-4n-6e, was recementing eight-inch casing; Gilbert et al's Starritt 1, NW NW SE Section 28-4n-6e, was spudded and shut down; Hughes et al's Norris, CNE NE SE Section 28-4n-7e, was drilling below 530 feet; Williams et al's Kroth, NE NE SE Section 33-3n-4e, was underreaming six-inch; W. E. McCraw announced the location of his Mayhue 1, NE C Section 19-2n-6e; and location was also made for Sledge et al's Wooley 1, SWC Section 22-2n-7e; H. L. Wirrick's Fee 1, SE SW Section 29-2n-7e, which has stood as a location since the first part of February is now rigging up standard tools.

In Stephens County, Doyle Oil's Cunningham 1, SE NE NW Section 4-1n-6w, had rig and tools on ground. Anderson-Kerr's Payne 1, SE SW NW Section 18-1n-5w, was a location.

Location of a 3500-foot test in Murray County was announced by A. E. Heiden, Saddler 1, NE C Section 19-1n-2e.

In Coal County, Dodd & Burton's Grigsby 1-A, NW SE NE Section 35-1n-8e, which has been shut down at 1100 feet since the latter part of January, was drilling ahead in black shale at 1340 feet, having had dry sand at 1109 to 1189 feet, and broken sand from 1189 to 1235 feet.

Southern Oklahoma

Bridwell Oil Company's Trout 1, NW C Section 3-7s-6w, Jefferson County, was announced as dry and abandoned at 2271 feet.

In Marshall County, Abbott et al's Simmons 1-A, NE SE NE NE Section 14-6s-6e, was drilling below 371 feet.

J. D. Wakefield et al's Kelly 1, in Jefferson County, NW NW SE Section 1-5s-8w, was drilling below 450 feet. A new wildcat test was announced in the same county, Hobbs et al's Burnett 1, NE SE SW NE Section 32-5s-5w, a rig.

In Tillman County, Emenhiser et al's Pace 1, CSW Section 3-4s-17w, was shut down at 2700 feet and Gypsy Oil Company's Pitcher 1, NWC Section 26-4s-15w, was drilling below 1970 feet in shale.

In Atoka County, L. E. Stewart et al's Stewart 1, SE C NE Section 2-4s-10e, was drilling below 125 feet in viola lime.

In Carter County, Clowe et al's Morgan 1, (formerly reported E. M. Boring et al) CNE NW SW Section 4-1s-3w, set eight-inch at 1798 feet and cleaned out to 1801, now waiting on cement to set.

New Drilling Indicated For Chase Townsite Pool

Wichita, Kansas.—Prospects for considerable new work in the Chase Townsite pool of western Rice County were brighter during the week when Gypsy Oil Company and Roy Ramsey announced locations in Section 32-19s-9w. Roy Ramsey et al's Smith 1, NW NW SW Section 32-19s-9w, topped conglomerate at 3247 feet and penetrated Arbuckle limestone from 3262 to 3280 feet, at which depth the hole filled with oil. Steel line measurement revealed a correction of eight feet making total depth 3272 feet. The test was then drilled deeper to 3276 feet where it swabbed 112 barrels in four hours, swabbing down to within 1000 feet of bottom. Operators then installed pumping equipment and had an initial yield of 210 barrels in 14 hours pumping through three-inch tubing at the rate of 16 to 22 strokes per minute. The discovery well, Smith 1, and the two locations listed above are practically in the center of a large block owned by Gypsy Oil Company. The discovery well was drilled on a small tract formerly owned by Shell Petroleum Corporation.

Northeastern Barton County

Slick, Pryor, and Lockhart's Andrea 1, CSE SE NE Section 12-17s-11w, had top of the Kansas City-Lansing at 3035 feet, first gas at 3052 feet, and a show of oil at 3118 to 3121 feet. From 3128 to 3139 feet, the total depth, a good increase of both oil and gas was encountered and the well started flowing at 42 barrels per hour. Production has been ranging from 875 to 1175 barrels in 24 hours. The new well is a north offset to the same operators' Fee 1, NE NE SE Section 12-17s-11w, which was completed March 18, 1933, for 220 barrels of oil and 75 barrels of water in 24 hours on the pump. Production was obtained principally from 3185 to 3214 feet, top of Kansas City-Lansing having been logged at 3033 feet and first gas encountered at 3052 feet. What is apparently an intermediate water bearing horizon was logged at 3133 to 3142 feet.

Magnolia Petroleum Company made a find of undetermined importance in its Andrea 1, an old well drilled deeper in the CNW NW SW Section 7-17s-10w, approximately six miles west of the Stratman pool in southwestern Ellsworth County. The well was originally completed March 14, 1933, making 40 barrels of oil and 60 barrels of water in 24 hours from 3218 to 3224 feet. The hole was drilled deeper finding a saturated conglomerate at 3347 to 3391 feet. Operators set 113 feet of five-inch liner at 3391 and drilled to 3393½ feet in a sand thought to be the Gorham. Oil increased from 500 to 1500 feet in three hours and a two-hour swabbing test yielded 45 barrels, fluid swabbing down to within 200 feet of bottom.

Hollow Pool

Phillips Petroleum Company's Warkentine 3, SWc Section 20-22s-3w, in the same section with the discovery well of the Hollow pool in northwestern Harvey County, had top of the chat at 3190 feet and a small showing of oil at 3197 feet. A second small showing of oil was encountered from 3196 to 3197 feet and 2700 feet of water from 3229 to 3237 feet. Drilling was being continued below 3250 feet to test Hunton limestone. Derby Oil Company's Schmidt 1, CSE SW NW Section 17-22s-3w, had top of the chat at 3161 feet and base of the Mississippi lime at 3361 feet. When last reported the test was drilling below 3370 feet with an estimated 31,000,000 cubic feet of gas and 10 barrels of oil per hour. This is one of the most interesting areas in the state at the present time and is the scene of a large number of operations.

Five Kansas Wells Yield 2,272 Barrels

Wichita, Kansas.—Reports of the week show five producers and three dry holes in Kansas for a total of 2272 barrels of new production from 20,879 feet of drill-in.

Results from western areas were below normal when only two wells were completed. However, one of these led in initial production and is of further importance due to having found additional production in the chat horizon in an area which is predominantly a Hunton lime producer.

Although a definite check has not been made of the condition in the Hollow area of western Harvey County, it appears that top of the Hunton lime structure does not coincide with that of

the chat horizon. The discovery well and its immediate offsets in Section 20-23s-3w, found nothing in the chat horizon but located the only Hunton production in the state. In the first section north of the discovery well several chat producers have been completed.

Completions are tabulated below:

Company, Well and Location	Init. Prod. Bbls.	Depth
Butler County—		
Cosmit Oil, Porter 53, cel nw ne 1-26s-4e	25	2418
Cowley County—		
Davis et al, Hopt 1, nw sw ne 22-32s-4e	337	3280
Greenwood County—		
Rex-Phillips, Boles 1, se sw sw 10-22s-12e	*	1806
Ellis et al, Norton 1, sw ne sw 15-22s-12e	*	1745
Harvey County—		
Mabee-Shell, Martens 3, nw ne se 19-22s-3w	¶7-1500	3192
Phillips Pet., Weibe 1, ne se ne 30-23s-2e	*	3548
Rice County—		
Rodgers et al, Reinet 1, ce½ ne sw 3-21s-6w	192	3390
Woodson County—		
Sheedy et al, 1, sw sw nw 19-25s-14e	218	1500
Cooper et al, Maylor 1, sw se se Section 12-25s-13e.	lcn.	abd.

*Failures. †Junked. ¶Million cu. ft. gas.

Fifteen First Reports Are Made in Kansas

Wichita, Kansas.—Fifteen first reports were made from eight Kansas counties during the week as compared to 16 reports from five counties during the preceeding seven-day period.

McPherson County regained the lead which it lost several months ago when five starts were made in the Ritz-Decker-Garrett area.

The following new activities were reported:

In Butler County, Lassen et al were building rig on their Brown 1, NWc SW Section 21-27s-6e.

In Ellsworth County, Magnolia Petroleum Company announced the deepening of its Andred 1, NWc SW Section 7-17s-10w, from its old total depth of 3224 feet. They were drilling below 3305 feet at last report.

In Harvey County, Margaret Gay announced the location of Reagean 1, NWc SW Section 3-22s-3w, in the Hollow area.

McPherson County led the list with five first reports. W. D. Dunn's Severton 1, SE NE SE Section 9-19s-2w, a rig; Lario Oil & Gas Company's Lewis 2, NW SW NW Section 36-19s-2w, a rig; Lario Oil & Gas Company's Miller 4, NW SW SE Section 24-19s-2w, a location; Vernon Oil's Drum 4, NE SE NE Section 35-19s-2w, location, and Davis-Sappington's Decker 1, NE C NW Section 2-20s-2w, also a location.

In Reno County, Roth et al were rigging up to drill deeper from the old total depth of 325 feet on their Zouder 1, CNW NW Section 15-24s-5w.

Ramsey et al announced two locations in Rice County, their No. 1 in SE NE NE Section 31-19s-9w, and their No. 1 Ira in SW NW NW of Section 32-19s-9w.

In Sumner County, Watchorn Oil & Gas Company was drilling below 1625 feet on their Rosecrans 2, (twin to No. 1) SE SW SE Section 17-35s-2e.

In Woodson County, Sheedy et al had the machine on ground for their Eades 1, NE C SE Section 24-25s-13e, and in the same section, NE SE NW were deepening their No. 1 having had top of the lime at 1535 feet and water in sand at 1562 to 1564 feet. Cooper et al were spudding in on their No. 1, SW SE SE Section 15-25s-14e.

Kansas Wildcats Currently Offer No Production Threat

Wichita, Kansas.—Although the present list of Kansas wildcat tests includes many interesting locations based on distance from production or with relation to known structural trends, those now at important depths in general are not showing promise of new production. Exploratory work during the past few months has been rather disappointing in view of the fact that several well defined structures have tested dry. Much of the present work is being done in the western portion, where depths are considerably greater than elsewhere in the state.

Kansas operators so far have been able to find new fields of importance just about as they have been needed. Despite the present outlook it does not seem doubtful that when the present flush pools have declined to a point that they no longer are able to supply the demand, new pools of importance will be discovered.

In Sumner County, Deal Oil & Gas Company's Tompkins 1, SWC Section 26-33s-1e, was drilling below 375 feet and Deal et al's Kelly 1, NW SW Section 2-33-2e, was still a rig.

In Pratt County, Ninnescah Oil & Gas Company's Hardesty 1, SW SE SE Section 28-27s-11w, was drilling below 3855 feet.

Reports from Greenwood County were: Charles Reser's Hull 1, NW SE Section 8-26s-9e, was shut down at 1230 feet; Reser & Chriswell's Boyer 1, CSW SW Section 28-26s-10e, was spudded and shut down. Knight et al's Moser 1, NE SW SW Section 33-22s-12e, which has had its machine on ground since the latter part of January, was rigging up machine.

A new wildcat test was announced in Woodson County, Joe Cooper et al's Quigley 1, SW SE SE Section 15-25s-14e, spudded.

In Reno County, Roth & Faurrot's Yoder 1, CNW NW Section 15-24s-5w, was rigging up to drill deeper from 325 feet.

In Harvey County, Phillips Petroleum Company's Weibe 1, NE SE NE Section 30-23s-2e, set six-inch at 3527 feet on top of siliceous lime, made three bailers of water from 3531 to 3533 feet, total depth 3458 feet, hole full of water and dry and abandoned. The test had Burgess sand at 2935 to 2973 feet for a hole full of water, chat at 2973 to 2975, top of Hunton lime at 3316 feet, a hole full of water from 3335 to 3340 feet, top of Viola lime at 3421 feet, hole full of water at 3432 to 3435 feet, top of Wilcox sand at 3436 feet, top of siliceous lime at 3523 feet.

In Stafford County, Atlantic Oil Producing Company's Gates 1, NW SE Section 27-21s-13w, set 10-inch at 2220 feet, and was underreaming 10-inch to 2585 feet.

In McPherson County, Investors Mineral Development Company's Kaufman 1, SEc Section 35-21s-3w, was a cellar. Lario-Madison's Kilke 1, CSE NE Section 34-20s-4w, had base Mississippi lime at 3501 feet, top of Viola lime at 3758 feet, and hole full of water at 3760 to 3764 feet, total depth, now shut down for orders. Darby Petroleum Company's Brucker 1, NE NW NE Section 24-19s-1w, was spudded. Clum et al's Nelson 1, CSE NW Section 12-18s-4w, was still a location. Shawver's Nichols 1, NE NW NW Section 28-17s-1w, had base of Mississippi lime at 2824 feet, top of the Hunton lime at 2920 feet, hole full of water, set six-inch at 2961 feet, and was drilling below 3025 feet.

In Barton County, Noble Drilling Company's Grant 1, CSW SW Section 4-20s-11w, had top of the conglomerate at 3300 to 3305 feet, top of the siliceous lime at 3305, seven-inch liner to 3313 feet, made one bailer of oil per hour at 3327 to 3328 feet, total depth 3362 feet, had 125 feet of sulphur water, will plug back. Rankin et al's Sooey

1, CSW NE Section 34-18s-12w, set 10-inch at 2114 feet and was drilling below 2185 feet. Vickers Petroleum et al's Kerr 1, NW NW SE Section 15-16s-12d, set eight-inch at 3192 feet, had a small show of oil at 3274 feet, top of conglomerate at 3379 feet, set six-inch on top of siliceous lime at 3384 feet, hole filled 1000 feet with fluid in five hours at 3388 to 3395 feet, 30 per cent water, now drilling below 3401 feet with an increase in water.

In Rice County, Langston et al's Wells 1, NE SE Section 4-20s-9w, set 15-inch at 190 feet and was drilling below 350 feet.

In Marion County, Ferrellet al's Williamson 1, CNW SE Section 21-19s-4e, had a hole full of water from 2800 to 2815 feet, drilling below 2830 feet.

Lario Oil & Gas Company's Fulton 1, SW SW NW Section 14-16s-2w, had top of the Kansas City Lansing at 2215 feet, a hole full of water at 2325 feet, and was running 10-inch at 2335 feet.

Schleimeyer et al's Smith 1, SEc Section 24-8s-25w, was underreaming six-inch to 4094 feet and was drilling below 4118 feet.

Five Shallow Producers In North Texas Fields

Wichita Falls, Texas.—The North Texas district contributed 14 completions during the past week, including nine dry holes and five shallow oil producers. The successful tests yielded 122 barrels of new production.

Completions for the week follow:

Company, Well and Location	Init. Prod. Bbls.	Depth
Archer County—		
C. L. Abercrombie et al, Fee 1-A	7	1149
Shappell Oil Co., Portwood 3	25	1365
Hazel B. Sparks et al, Matlock 1-A	*	705
White & Duncan et al, Pruett-Webb 3-B	10	693
D. L. Wolfe et al, Andrews 3	*	982
Clay County—		
Luke Hodges et al, Sanzenbacker 1	*	805
Wichita County—		
R. P. Dorian et al, Musgrave 2	*	501
Young County—		
Floyd Arp et al, Belknap 3-B	40	699
Belknap 2-E, Sec. 21	40	696
Helena O&G Co., Slaughter 1, Sec. 424	*	647
Panhandle Ref. Co., Marshall 1, Sec. 3401	*	995
Wheeler & Brashear, Lowe 1, Sec. 59	*	954
J. R. Wilson et al, Terrill 1	*	503
Wooten & Reed, Porter 1	*	712

*Failures. †Junked. ¶Million cu. ft. gas.

Southeastern Archer Co. Well Pumping 50 Barrels

Wichita Falls, Texas.—Invading one of the few remaining unexplored areas in southeastern Archer County with a wildcat test, King and Krahenbuhl's A. J. Ikard 1 has uncovered a new shallow oil pool with an initial production on pump rated at 50 barrels daily from sand at 989--992 feet. It is located in SEC NW Section 1889, T.E.&L. Survey, and about three miles northeast of nearest production. Nearest pipe line facilities are about two miles away. Ikard 1 logged Gunsight lime at 970-81 feet. Continental Oil Company owns lease on the east half (160 acres) of Section 1889, and will be required to offset the discovery well to the east should it be placed on steady production. The oil tests 37.2 gravity.

Offsets drilled to the shallow wildcat oil producer completed early last February by T. G. Shaw et al on the J. Marshall 95-acre lease, Section 3401, northern part Young County, have proven dry although the discovery well pumped 39 barrels in 18 hours from sand at 880-881½ feet. Panhandle Refining Company's Marshall 1 plugged at 995 feet, having registered only a small show of oil at 884-885 feet. W. E. Fitzgerald et al's Marshall 1 tested 300 feet oil and water in 18 hours at 883-891 feet, but drilled ahead to fulfill contract depth.

No Potential Gauge Taken On Gray County Wildcat

Pampa, Texas.—Absence of a pipe line connection has prevented Sun Oil Company from procuring a gauge on Combs-Worley 1-B, which has been deepened to 3050 feet, or sea level depth, after gauging 600 barrels oil in nine hours at 3010-20 feet week before last. It is in the SEc SW¼ Section 34, Block 3, I&GN Ry Survey, Gray County, and is a west offset to Sinclair Prairie Oil Company's Combs-Worley 1-E, which flowed 15 barrels oil hourly from granite wash formation at 3050-3084 feet, or 60 feet below sea level.

An isolated oil producer in southwestern Gray County now identified as Phillips Petroleum Company's Wilson-Furneaux 1, recently increased its flow from 30 to 80 barrels daily as result of re-conditioning work. This wildcat was drilled in the NEc SE¼ Section 202, Block B-2, H&GN Ry. Survey in 1929-1930 on the south side of the granite ridge by Frank W. Dillard of Pampa and others, registering an initial flow of 60 barrels oil daily in February, 1930, after plugging back from salt water at 3234-3475 feet to 3215 feet. The property later was acquired by Independent Oil & Gas Company, and absorption of the latter by Phillips Petroleum Company followed. The chances for a pipe line connection, and more development in the area are considered enhanced as result of the comeback staged by the well.

Pipe line connection for the western Wheeler County wildcat oil producer of Mert Oil Company (Devore and Robinson) on the G. W. Sitter 160-acre tract, Section 33, Block 24, H&GN Ry. Survey, has been attained after waiting about nine months. Owners have built about three miles of line to tie into the nearest section of the Humble Pipe Line Company. Sitter 1 is located in an established dry gas field, having passed up 80,000,000 cubic feet between 2020 and 2530 feet, and made a 75 barrel oil pumper in granite wash formation at 2745-60 feet. It has a surface elevation of 2564 feet.

Completions for the Panhandle district last week follow:

Company, Well and Location	Init. Prod. Bbls.	Depth
Gray County—		
Sinclair Prairie Oil Co., Combs-Worley 1-E	¶3-350	3084

*Failures. †Junked. ¶Million cu. ft. gas.

One Small Pumper For West Texas

San Angelo, Texas.—Two dry holes and a small pumper comprised the completion list credited to the West Texas district during the past week.

The lone producer resulted from the Gulf Production Company's Hutchings Stock Association 14, located on the west side of the Gulf-O'Brien field, Ward County, after plugging back from sulphur water at 2734-39 feet to 2690 feet. It pumped 27 barrels oil and 25 barrels water on initial gauge.

Rowan-Nichols Oil Company's I. R. Street 1, located in the Grand Falls field, Ward County, and on 120-acre lease in section 17, block 34, H&TC Ry. survey, farmed out by Humble Oil & Refining Company, has been plugged at 2769 feet. It developed only a small show of oil at 2402-12 feet and at 2712-43 feet.

Completions for the week follow:

Company, Well and Location	Init. Prod. Bbls.	Depth
Crockett County—		
Northrup & Nichols, B. B. Ingham 1	*	2505
Ward County—		
Gulf. Prod. Co., Hutchings 14.	27	2739
Rowan-Nichols Oil Co., I. R. Street 1	*	2769

*Failures. †Junked. ¶Million cu. ft. gas.

East Texas Orders for Pumping Equipment Jumps

Tyler, Texas.—Purchase and installation of pumping equipment for leases in the low pressure areas of the East Texas field has attained a sizeable volume as result of widespread disregard of production restrictions for some six weeks prior to the temporary shut-down order issued for all wells by the railroad commission effective April 6. Excessive oil drainage has greatly shortened the flowing life of many properties, and it is estimated that more than 100 wells ceased making a natural flow as result of this outbreak of proration violations. An even greater number have registered unmistakeable signs of bordering on the pumping stage, but the natural ability of the field to equalize on bottom hole pressure in short order will likely stimulate the flow of such wells as result of the suspension of production for five days.

East Texas operators placing large orders for pumping equipment did so in anticipation of the early exhaustion of the flowing life of wells to be fortified with lifting equipment, rather than to cope with an emergency in the form of dead wells. In nearly every instance the companies making the large purchases have been abiding by proration restrictions, but have been exposed to oil drainage by neighboring violators, or those protected by court orders.

Recessions in reservoir pressure in virtually all sections of the field have been pronounced in recent weeks, except on the extreme west flank of the structure where the advancing water table serves to uphold the pressure so that a moderate decline takes place. Average bottom hole pressure prior to the latest shut-down was estimated by various petroleum engineers as being from 1445 to 1460 pounds, or about 100 pounds less than the average credited to the field one year previous.

Bottom hole pressure readings are serving as a guide for most of the operators in projecting the flowing life of their wells, and for this reason is observed carefully. Rapid decline in pressure, and a wavering flow of oil on groups of leases sent some of the operators into the market for large pumping equipment orders in recent weeks.

Following through on an order placed in February for 100 steel pumping derricks, Sinclair Prairie Oil Company, third largest lease owner, has purchased 12 central power pumping units, and also 50 individual well pumping units.

Authorization made last week by Sun Oil Company for the installation of two more central power pumping units increased its total to seven, while it also has three separate leases standardized with equipment that permits the pumping of two additional wells besides the well on which it is located.

Austin, Texas.—The attorney general was granted a temporary injunction April 7 restraining McMurray Brothers from producing 14 wells in the East Texas field and the Arkansas Drilling Company from producing two wells. These concerns were among the few, which continued to produce oil there in violation of the shut-down order of the Texas Railroad Commission.

Stanolind Oil & Gas Company, operator of a large amount of acreage held jointly with Pure Oil Company on the lower end of the Joiner area, has placed an order for 50 complete standard rigs, except for derricks already in place, and a like number of gas engines.

Magnolia Petroleum Company, first major to engage in erecting pumping equipment on a large scale in the field far in advance of actual requirements, is moving in standard rigs on two wells that went dead last week in the Overton townsite area.

Numerous single well installations of pumping equipment have been authorized by operators lately.

Reluctance on the part of many of the operators in revealing the type of pumping equipment most preferred has been a serious handicap to manufacturers in trying to anticipate requirements. Those purchasing equipment invariably demand delivery on short notice, and this requirement has cost some of the manufacturers actual sales through inability to deliver within the specified time because of prior orders on their books, with output still on a restricted basis.

Court Order Permits 300 Barrels Daily from Wells

Tyler, Texas.—A court order permitting withdrawal of 300 barrels of oil daily from each of its 33 wells in the East Texas field was procured by the British-American Oil Producing Company of Tulsa and Toronto, Canada, through Federal Judge Randolph Byant March 31. Between March 24 and 29 this company is credited with having produced about 275,000 barrels of oil from its East Texas properties, maintaining an average of more than 53,000 barrels daily during the last four days. Exhaustion of its available storage made it necessary to cut back production.

Crude produced and purchased by British-American Oil Producing Company is shipped to Gulf Coast via major company pipe lines then loaded aboard tankers for consignment to affiliated refining interests in Canada.

The flat quota of 300 barrels daily per well authorized by Judge Bryant is to remain in effect for 10 days, and in meantime a hearing on the injunction suit has been set for April 8 at Sherman.

Other East Texas lease owners enjoying special production privileges through Judge Bryant includes F. A. Bates and Underwood's M. T. Cole 40-acre lease, bearing four wells, and the Rowan-Nichols Oil Company's two leases with two wells on each. The latter is allowed 74 barrels daily per well, but is limiting its takings to the railroad commission's allowable due to inability to dispose of the oil, except at below market prices. Bates et al are allowed to produce 500 barrels daily per well, and are selling same on the spot market at considerably less than the posted.

Two Woodbine Wildcats Considered Condemned

Tyler, Texas.—Two of the group of wildcat tests trying for production from the Woodbine sand horizon along an established fault zone extending east to west across Hunt, Hopkins, Franklin and Titus Counties in Northeast Texas were considered eliminated from possible oil production last week.

The eastern Hunt County test of Russell, Johnson et al on the N. A. Gregory 30-acre tract, Wm. Glass survey, logged first red beds at 3760 feet, with an elevation of 622 feet, and was coring lower Woodbine sand at 4010 feet with no indications of oil or gas. In Hopkins County, Dilworth Hager, B. H. Ashby et al's Henry J. Smith 1, J. A. Craft survey, suspended operations after testing 3500 feet salt water in one-quarter hour when given drill stem test in lower Woodbine sand at 3575-3620 feet. It has an elevation of 431 feet, and logged first red beds at 3202 feet. Indications are that it is situated on the down-throw side of the fault.

East Texas

In Anderson County, McAlister & Barclay's J. C. Beard test on 62-acre tract, J. Trimmer survey, dry and abandoned 2004 feet in shale. W. L. Tarkington et al's J. C. Beard 1-A, A. J. Trimmer survey, drilling 1230 feet. The Bowie County test of Tom Bell, W. J. Dobbs & Fred S. O'Neill on the Mrs. T. M. Moss 465-acre tract, O. D. Watson survey, topped Nacatoch sand 1135 feet, with elevation of 305 feet, is idle at 2900 feet.

The Cass County test of T. H. Pardoe et al's S. A. Orr 316-acre lease, C. W. Morris survey, shut down 1605 feet.

In Cherokee County, T. C. Cardwell et al's W. C. Wallace 1, C. Burnett survey,

spudding. H. D. Hamilton and J. C. Haynes' (Saranac Oil Co.) P. E. Jones 1 on 132-acre tract, J. D. Hamilton survey, drilling 390 feet. Loring Oil Company's F. M. Swearingen (68-acres) 1, Oliver Lund survey, logged top Pecan chalk 3680 or 3592 feet and Austin chalk 4626-4878 feet, with elevation of 387 feet, topped Woodbine sand 4913 feet and red beds at 4948 feet and second sand 5025-65 feet, washing hole to bottom in shale 5185 feet.

In Ellis County, the Paris Oil Company's O. S. Bain 1-A, R. M. Williamson survey, drilling shale 995 feet.

The Franklin County test of White Oak Oil Company on the O. C. Clanton 82-acre tract, S. McCreary survey, elevation 378 feet, logged Pecan chalk 1423-1540 feet, topped Austin chalk at 2402 feet, shut down 3235 feet.

In Freestone County, Clyde Creighton & Company's W. A. Holley (80-acres) 1, A.B.&M. survey, Abstract 51, topped Pecan chalk at 3105 feet, and first Austin chalk at 3830 feet, shut down 4630 feet.

In Henderson County, A. R. McElreath-F. W. Suggett et al's T. E. Scott 1 on 118½-acre tract, Cleveland Robb survey, cemented casing and shut down 243 feet.

In Hopkins County, Culbertson & Lynch's Louis Stribling (48-acres) 1, Thomas Norris survey, materials. Dilworth Hager-B. H. Ashby et al's Henry J. Smith (450-acres) 1, J. A. Craft survey, logged top broken Pecan chalk 1500 feet and first hard chalk 1516 feet and base 1630 feet, with elevation of 431 feet, Austin chalk 2220-2750 feet, first red beds at 3205 feet and tested salt water on drill stem test in lower Woodbine sand at 3575-3620 feet.

The Hopkins County test of Burgess-Simpson and Ideal Oil & Royalty Company on the Mt. Vernon National Bank fee tract, M.E.&P. Ry. survey, logged Pecan chalk 1543-1598 feet, with elevation of 385 feet, probably junked hole 2470 feet.

In Hunt County, Russell-Johnson & Bunn's Smith-Berry 1, W. Glass survey, logged Pecan chalk 1247-1333 feet and Austin chalk 2265-2785 feet, with elevation of 622 feet, first red beds at 3760 feet, coring sand 4005 feet.

In Kaufman County, Elzey, Bentley & Brewer's J. B. Hunter 1, R. Sowell survey, drilling shale 480 feet.

The Limestone County test of C. C. Curtis and J. E. Winans on the Emma Daniels tract, Pedro Varrella survey, spudded and shut down. Waite & Kadane et al's B. B. Barron (640-acres) 2, E. Mabry survey, rig.

In Morris County, Buchanan, Burkhalter et al's Staggers 2, J. D. Nelson survey, location. Joiner Ranch Development Company's Reese 1, T.C. Ry. survey, location.

In Navarro County, R. B. Goddings et al's W. Kent 1 on 48½-acre tract, C. B. Emmons survey, spudded and shut down.

In Smith County, R. L. Martin (Thayer & Mattocks) et al's W. P. Rushing (50-acres) 1, J. Herrin survey, topped Pecan chalk 3140 feet, drilling 3320 feet.

The Titus County test of Steve Rotunda and Roy Davis et al on the Pittsburgh National Bank fee (150-acres) 1, Jas. T. Box survey, cemented surface pipe.

In Upshur County, Newsom & Orr's D. J. Smith 1, J. R. Davis survey, topped Pecan chalk at 2345 feet, with elevation of 310 feet, fishing 2680 feet. J. K. Wadley-C. H. Lyons-J. P. Evans' W. M. Shettlesworth-Roeser (50-acres) 1, J. M. Dunn survey, rigging up.

In Van Zandt County, L. R. Barton et al's W. P. Nixon-Hubbard (510-acres) 1, M. J. Cardena survey, is idle at 3410 feet. C. A. Everts Drilling Company's Gillentine 1 on 119-acre tract, Mund Gross survey, location for 3300-foot test. Roy Stumpf et al's L. K. Riggs 1 on three-acre tract, Wm. Daniel survey, drilling 1160 feet. Manning & Carlin's Howell & Owens 37-acre tract, Wm. H. Bunch survey, rig. Petroleum Pipe Line & Storage Company's S. S. McGee (972-acres) 1, Wm. Daniels survey, rigging up for Nacatoch sand test.

The Wood County test of Hull and W. B. Saulsbury on the T. H. Peterson 320-acre tract, W. B. McNutt survey, Abstract 418, drilling shale 3150 feet.

East Texas Completes Wells on New Leases

Tyler, Texas.—Five leases participating in their first production were represented in the completions reported for the East Texas field during the past week, indicating that a few undrilled productive tracts still exist in the field. Completions for the week included 28 flowing and pumping wells and one dry gasser, located 1½ miles east of the south end of the field.

A flow of 20,000,000 cubic feet of dry gas was credited to the initial performance of the outpost test of Malone-Cararas and Edwards in the southwest corner of the J. S. Williams 60-acre tract, Jesse Crawford survey, after drilling through sand at 3633-45 feet to 3700 feet, where the hole is bottomed in shale. It has a surface elevation of 400 feet.

Hunt Production Company's D. M. Bradford 3-F, located on 55-acre lease near the original section of the field, pumped eight barrels oil per hour from regular broken sand at 3524-3640 feet. Sun Oil Company's R. Jeff Hendon 7, also located on the east side of the structure, flowed 15 barrels oil hourly through open two-inch tubing from broken sand 3541-3583 feet, and will likely have to be hooked up to the central pumping power unit already installed on the lease.

In the Kilgore section of the field, Magnolia Petroleum Company's Nat Bean 6, an east side property, flowed 60 barrels daily by heads at 3558 feet, and is also a candidate for the pump.

Completions for the week follow:

Company, Well and Location	Init. Prod. Bbls.	Depth
Joiner Area—		
A. P. Carey et al, Ras Redwine (20-ac) 2	2000	3585
Gulf Prod. Co., G. G. Turner (312-ac) 21	10,500	3698
Humble O&R Co., J. R. Box (125-ac) 10	9000	3798
Kangerga (330-ac) 32-A	4000	3698
A. L. Walker (125-ac) 11	10,000	3677
Hunt Prod. Co., D. M. Bradford (55-ac) 3-F	200	3640
Malone-Cararas & Edwards, J. S. Williams (60-ac) 1	¶20	3700
Mid-Kansas O&G Co., W. T. Grissom (842-ac) 42	11,000	3662
T. O. Warren (60-ac) 5	7500	3652
Sun Oil Co., R. Jeff Hendon (100-ac) 7	700	3583
The Texas Co., A. S. Jarvis (115-ac) 7-B	6500	3681
Kilgore Area—		
Darby Pet. Co., C. O. Christian (117-ac) 8-B	9000	3750
Gulf Prod. Co., T. C. Reeves (80-ac) 5	7500	3547
E. F. Hatcher et al, G. H. Morris (17-ac) 1	8000	3638
Humble O&R Co., L. D. Crim (907-ac) 73	9300	3703
Henry Sexton (264-ac) 17-B	6500	3754
C. Young (7½-ac) 1-B	8400	3728
Ed. Lacy et al, Fee 1	8500	3589
Magnolia Pet. Co., Nat Bean (100-ac) 6	60	3558
Rhoads Drlg. Co., Sabine River 11, Tract 5	7000	3556
Sinclair Prairie Oil Co., M. Kennedy (52-ac) 4-B	1200	3657
The Texas Co., M. T. Cole (220-ac) 13	7800	3552
Longview Area—		
Gulf Prod. Co., M. O. Sheppard (335-ac) 24	10,000	3538
Magnolia Pet. Co., Howard Hampton (169-ac) 13	8500	3675
F. W. Merrick, Inc., W. R. Nicholson (96-ac) 8	9000	3663
B. F. Phillips et al, League 1	8500	3615
A. D. Robinson et al, Leroy Rodden (30-ac) 4	9600	3618
The Texas Co., E. M. Woods (90-ac) 8	10,500	3588
Yount-Lee Oil Co., F. K. Lathrop (63-ac) 3-B	8400	3576

*Failures. †Junked. ¶Million cu. ft. gas.

Texas Drill Permits Trailing Last Year's

Austin.—Permits to drill wells in Texas for the week totaled 121, bringing the total for the year up to 1513, which compared with 1580 for the corresponding period of last year.

As has been the case for several months, new operations planned have been heaviest in Archer, Gregg, Montgomery, Rusk and Young Counties, which are more or less representative of the "hot spots" in their respective districts.

In Archer County, C. W. Boller, Wichita Falls, was granted a permit to drill W. H. Portwood 1, (40-ac), 450 feet from the east and 150 feet from the south line of TE&L Survey No. 1587. Gross & Reid, Wichita Falls, were granted a permit to drill Archer County 1, (160-ac), 1750 feet from east and 3183 feet from south line of W. M. Yeasley Survey. C. L. Abercrombie, Archer City, was granted a permit to drill Fee 2, (73-ac), 1360 feet from north and 1350 feet from east line of Block 154, J. W. Harris Survey. A. P. Kouri, Wichita Falls, was granted a permit to drill Montgomery 1B, (25-ac), 150 feet from south and west lines of 133 Club Ranch Survey. Rathke Oil Company, Wichita Falls, was granted a permit to drill Gulf 1, (40-ac), 607 feet from west and 493 feet from north line of Block 9, DCSL Survey No. 3.

In Austin County, Humble Oil & Refining Company, Houston, was granted a permit to drill O. Wilson 5, (134-ac), 2491 feet from northwest and 407 feet from northeast line of Wm. Harvey Survey No. 2.

In Bastrop County, Humble Oil & Refining Company, Houston, was granted permits to drill E. Wilhelm 1, (222-ac), 245 feet from west and 330 feet from south line of S. Wolfenberger Survey; B. F. Osborn 1, (63-ac), 330 feet from south and east lines of S. Wolfenberger Survey; P. Wolfenberger 2, (75-ac), 330 feet from south and west lines of S. Wolfenberger Survey.

In Bee County, Humble Oil & Refining Company, Houston, was granted a permit to drill I. Hall 1, (193-ac), 330 feet from east and 1815 feet from south line of J. Butler Survey. Aztec Oil & Refining Company, San Antonio, was granted a permit to drill J. M. Taylor 2, (80-ac), 1425 feet from north and 330 feet from east line of Section 13, J. M. Uranga Survey.

In Bexar County, B. W. Teagarden, San Antonio, was granted permits to drill Suburban Farms 1, (228-ac), 200 feet from north and 600 feet from east line of Block 72, Suburban Farms Survey; R. T. Pruitt 1, (106-ac), 200 feet from east and 1500 feet from south line of S. McCullough Survey; K. K. Herring 1, (229-ac), 200 feet from south and east lines of Section 349. J. M. Russell, San Antonio, was granted a permit to drill B. Botze 2, (95-ac), 300 feet from north and 600 feet from west line of F. Cardenas Survey. Earl S. Post, San Antonio, was granted a permit to drill J. F. Bilhartz 2A, (40-ac), 437 feet east of No. 1, Section 48, F. Rolen Survey; 1A, 150 feet from west and 184 feet from north line of Survey. D. C. Pegg, San Antonio, was granted a permit to drill E. Gembler 4, (100-ac), 1080 feet from south and 200 feet from east line of Survey No. 52. D. L. Tipton, San Antonio, was granted a permit to drill A. C. Gembler 1, (120-ac), 616 feet from north and 514 feet from west line of M. Gotari Survey.

In Brown County, R. Z. VanBibber, Brownwood, was granted a permit to drill J. S. Leach 1, (40-ac), 150 feet from north and west lines of Section 34, T& NO Survey. S. B. Owens, Brownwood, was granted a permit to drill W. J. Lynch 5, (114-ac), 450 feet from north and 926 feet from east line of Section 40, M. Little Survey. Dodgin & Mitchell, Santa Anna, were granted a permit to drill L. L. Childress 1, (160-ac), 850 feet from west and 150 feet from south line, Section 8, E. T. Ry. Survey.

In Callahan County, Kamon-Thebiay, Fort Worth, were granted a permit to drill Long 1A, (160-ac), 560 feet from east and 1380 feet from south line of R. Edwards Survey No. 778. Williams & McMeese, Clyde, were granted a permit to drill W. Williams 1, (200-ac), 2115 feet from south and 1320 feet from west line of Section 1, Block 1, S. P. Ry. Survey.

In Coleman County, J. C. and Margaret Shaffer, Coleman, were granted a permit to drill T. O. Watson 4, 750 feet from east and 1250 feet from south line of Section 751, Block 7, Martines Survey. E. V. Gwinnup, Fort Worth, was granted a permit to drill S. C. Edmundson 1, (117-ac), 425 feet from west and 150 feet from south line of E. N. Eubanks Survey No. 270. Herbert Aid, Fort Worth, was granted a permit to drill C. F. Burns 1, (90-ac), 1550 feet from east and 150 feet from south line of Section 22, HT&B Survey.

In Carson County, The Texas Company, Fort Worth, was granted a permit to drill C. R. Garner 2, (640-ac), 990 feet from north and east lines of Section 95, Block 4, I&GN Survey.

In Comanche County, B. F. Hill, Dallas, was granted a permit to drill R. W. Gray 1, (100-ac), 962 feet from west and 365 feet from south line of J. B. Bonham Survey.

In Cherokee County, T. C. Cardwell, Joinerville, was granted a permit to drill W. O. Wallace 1, (155-ac), 500 feet from west and 2500 feet from south line of C. Burnett Survey.

In Duval County, Navarro Oil Company, Houston, was granted a permit to drill O. W. Hahl 5, (320-ac), 330 feet from west and 990 feet from south line of Section 360 W. N. Seago Survey. Windsor Oil Company, Laredo, was granted a permit to drill L. L. Cummings 3, (20-ac), 330 feet from north and west lines E½ NW¼ NE¼ of Survey No. 44. Sarnosa Oil Company, San Antonio, was granted a permit to drill A. Weil 6, (640-ac), 330 feet from northwest and northeast lines of Section 130, B. Elizando Survey.

In Eastland County, Texas Pacific Coal & Oil Company, Fort Worth, was granted a permit to drill C. E. Allen 3, (1342-ac), 330 feet from north and east lines of Jno. Foster Survey.

In Ector County, Fred Turner, Jr., Midland, was granted a permit to drill Addis 1A, (320-ac), 440 feet from west and 330 feet from north line of Section 35, Block 43, T&P Survey. Waggoner & Harrison, Big Spring, were granted permits to drill Addis 1A, (120-ac), 330 feet from north and west lines SW¼ NW¼ of Section 35, Block 43, T&P Survey; 2A, 330 feet from south and west lines NW¼ SW¼ of Survey; 3A, 330 feet from north and east lines of SW¼ of Survey.

In Falls County, Sporer & Allnot, Waco, were granted a permit to drill Gurley 1, (10-ac), 160 feet from north and east lines of Block 40, J. T. Davis Survey.

In Fort Bend County, (Amended location), Humble Oil & Refining Company, Houston was granted a permit to drill M. Gubbels 8, (190-ac), 1460 feet from south and 492 feet from east line of S. Kennedy Survey. Gulf Production Company, Houston, was granted permits to drill F. I. Booth A 13, (1107-ac), 898 feet east of No. 13, S. Kennedy Survey; M. Gubbels A 3, (388-ac), 1457 feet from north and 422 feet from east line of S. Kennedy Survey.

In Fisher County, Cranfill-Reynolds Oil Company, Houston, was granted a permit to drill S. C. George 2, (160-ac), 330 feet from north and west lines of Section 200, Block 1, BBB&C Survey. Southern Oil Corp. of America, Fort Worth, was granted a permit to drill

A. E. Pardue 1, (40-ac), 990 feet from south and east lines of Section 202, Block 1, BBB&C Survey.

In Gregg County, Faith Oil Corporation, Wichita Falls, was granted permits to drill J. C. Barrett 5, (140-ac), 330 feet from south and 947 feet from west line of B. W. Witcher Survey; 6, 990 feet from south and west lines of Survey; 7, 660 feet north of No. 6; 8, 1607 feet from west and 330 feet from south line of Survey; E. E. Stone 1, (50-ac), 330 feet from north and west lines of H. H. Kirk Survey. J. E. Medling, Longview, was granted a permit to drill W. Williams 1, (1-ac), center of G. F. Penn Survey. Barnsdall Oil Company, Tulsa, Oklahoma, was granted a permit to drill L. Bingham 10, 660 feet east of No. 6, Castleberry Survey. Gulf Production Company, Houston, was granted permits to drill J. C. Judge 35, (518-ac), 660 feet west of No. 14, F. W. Johnson Survey; (Amended location), F. Birdsong 8, (88-ac), 660 feet northeast of No. 4, W. P. Chisum Survey. Atlantic Oil Producing Company, Dallas, was granted a permit to drill S. C. Fishburn 8, (112-ac), 800 feet northeast of No. 2, F. Johnson Survey.

In Gray County, H. F. Wilcox Oil & Gas Company, Tulsa, Oklahoma, was granted a permit to drill Combs 19, (160-ac), northeast corner of Section 35, Block 3, I&GN Survey. Phillips Petroleum Corporation, Bartlesville, Oklahoma, was granted a permit to drill Jackson 7, (80-ac), 990 feet from east and 330 feet from south line S½ NE¼ of Section 88, Block 2, H&GN Survey. Denworth Oil Company, Tulsa, Oklahoma, was granted a permit to drill Back B2, (80-ac), southeast corner of NE¼ of Section 44, Block 25, H&GN Survey.

In Guadalupe County, Henry Baker, Seguin, was granted a permit to drill B. Rabe 1, (208-ac), 500 feet from north and 200 feet from west line of M. Baker Survey. Magnolia Petroleum Company, Dallas, was granted a permit to drill E. W. Williams 1, (100-ac), 200 feet from north and east lines of G. Dewitt Survey No. 13. Luling Oil & Gas Company, San Antonio, was granted a permit to drill A. Schuenmann 1, (130-ac), 450 feet from south and 150 feet from west line of B. Fuquaway Survey.

In Harris County, Green Bayou Oil Company, Houston, was granted a permit to drill P. S. Griffith 1, (1393-ac), 2700 feet from north and 1000 feet from east line of Block 38, T. Bell Survey.

In Hopkins County, Lynch & Culbertson, Sulphur Springs, were granted a permit to drill L. Stribling 1, (25-ac), 1600 feet from north and 200 feet from west line of T. Morris Survey.

In Howard County, Sinclair Prairie Oil Company, Fort Worth, was granted permits to drill Dodge 6, (1120-ac), 330 feet from south and west lines of Section 11, Block 30; L. C. Denman A 1, (80-ac), 330 feet from north and west lines of Section 14, Block 30, T&P Survey. Plymouth Oil Company, Big Spring, was granted a permit to drill A. Kloh 8, (40-ac), Section 5, Block 32, Township 2S.

In Hunt County, Solar Exploration Company, Ardmore, Oklahoma, was granted a permit to drill Gregory 1, (37-ac), center of Wm. Glass Survey.

In Hutchinson County, J. M. Huber Petroleum Company, Borger, was granted a permit to drill Johnson 2, (80-ac), 990 feet south of No. 1, Section 34, Block Y, A&B Survey.

In Jack County, O. M. Wallace Wichita Falls, was granted a permit to drill W. D. Moore 1, (40-ac), 150 feet from south and east lines of Section 2, L. V. Bulington Survey.

In Jim Hogg County, Seaton A. Barnes, Jr., Wichita Falls, was granted a permit to drill R. Holbein 1, (10-ac), 220 feet from west and 340 feet from south line of Section 1, Block 54, Las Animas Survey.

In Jones County, Shaheen Oil Company, Abilene, was granted a permit to drill W. E. Robinson 1, (161-ac), 1320 feet from south and east lines of Lot 8, Block 9, Montgomery Survey.

In Kerr County, W. E. Clark, San Antonio, was granted a permit to drill J. Love 1, (2560-ac), 600 feet from north and west lines of Section 1759, C. Winn Survey.

In Montgomery County, Harrison Oil Company & Abercrombie, Houston, were granted a permit to drill J. Massey 6, (160-ac), 466 feet from south and east lines of T&NO Survey No. 16. South Gulf Oil Company, Houston, was granted a permit to drill D. D. Granger 2, (117-ac), 933 feet east of No. 1, T& NO Survey No. 14. Gulf Coast Drilling & Producing Company, Houston, was granted permits to drill J. T. Bertrand 1, (84-ac), 466 feet from north and east lines of G. W. Wagers Survey; 2, 884 feet from north and 466 feet from west line of Survey; 3, 466 feet from east and 948 feet from south line of Survey; 4, 466 feet from south and west lines of Survey. Alpha Petroleum Corporation, Houston, was granted a permit to drill South Texas Development D 1, (300-ac), 466 feet from north and east lines of F. K. Henderson Survey. The Texas Company, Houston, was granted permits to drill E. Moody 24, (473-ac), 1400 feet southeast of No. 8, Ransom House Survey; 25, 1406 feet southeast of No. 3; 26, 326 feet from northeast and 2293 feet from southeast line of Survey; 27, 2178 feet from northeast and 2632 feet from southeast line of Survey. Sun Oil Company, Dallas, was granted permits to drill South Texas Development 3, (80-ac), 933 feet north of No. 2, T&NO Survey No. 5; W. N. Foster 4, (640-ac), 467 feet from south and west lines of Jno. Bricker Survey. Tide Water Oil Company, Houston, was granted a permit to drill P. G. Krohn 3, (162-ac), 467 feet from north and west lines of S. H. Bryan Survey.

In Matagorda County, United North & South Oil Company, San Antonio, was granted a permit to drill Sheldon 1, (20-ac), 415 feet from north and 240 feet from east line of Block 25, J. C. Keller Survey.

In McLennan County, R. J. Marak, West, was granted a permit to drill R. A. Drews 1, (83-ac), 150 feet from south and west lines of Section 29, M. A. C. Jewett Survey.

In McMullen County, Light Stephenson, San Antonio, was granted a permit to drill C. T. Lark 1, (40-ac), 275 feet from north and 150 feet from west line of Block 15, E. W. B. Scrugham Survey.

In Nueces County, Shasta Drilling Company, Longview, was granted a

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permit to drill N. Erigan 1, (10-ac), 200 feet from north and 126 feet from east line of Shepard Survey No. 40.

In Palo Pinto County, Brazos River Gas Company, Mineral Wells, was granted a permit to drill J. H. Webster 5, (51-ac), 300 feet from north and east lines of Jno. Smith Survey.

In Refugio County, Luling Oil & Gas Company, San Antonio, was granted a permit to drill Skelly 2, (28-ac), east central part of lease, Block 11, Refugio Survey.

In Rusk County, Dyck Oil Company, Tulsa, Oklahoma, was granted a permit to drill J. Bell 3, (17-ac), 200 feet from north and west lines of S. P. Hollingsworth Survey. Trico Oil Company, Seguin, was granted a permit to drill R. Redwine 1, (6-ac), 195 feet from west and 220 feet from south line of J. Ximinez Survey. Mohawk Oil Company, Tyler, was granted a permit to drill W. Rollins 4, (44-ac), 659 feet east of No. 2, J. B. Cardenas Survey. Mid-Kansas Oil & Gas Company, Shreveport, La., was granted permits to drill M. A. Price 13, (205-ac), 733 feet from west and 867 feet from south line; Kangera 5, (65-ac), 330 feet from north and west lines of J. B. Cadena Survey. Humble Oil & Refining Company, Houston, was granted permits to drill S. A. Plowman A A21, (228-ac), 478 feet from west and 1088 feet from south line of F. Cordova Survey; H. Sexton A 8, (100-ac) 330 feet from south and west lines of M. McCabe Survey.

In Starr County, Ed Lindberg, La Feria, was granted a permit to drill R. E. Margo 1, 220 feet from east and 160 feet from south line of Lot 9, Porcion 70. Dr. R. McCormick, Waco, was granted a permit to drill E. Gonzales 1, (763-ac), 150 feet from north and west lines of Lot 11, Share 32-33.

In Shackleford County, Star Drilling Company, Wichita Falls, was granted a permit to drill N. J. Brewster 2, (120-ac), 435 feet from north and 200 feet from west line of Section 48, Blind Asylum Survey. J. A. Jones, Moran, was granted a permit to drill W. J. Dodson 5, (80-ac), 160 feet from east and 440 feet from north line of Section 1, Blind Asylum Survey. F. N. Palm, Albany, was granted a permit to drill V. Palm 3, (60-ac), 300 feet from south and 150 feet from west line of Section 67, LAL Survey.

In Throckmorton County, Wilson & Swain, Woodson, were granted a permit to drill J. T. O'Dell 1, (40-ac), 450 feet from west and 300 feet from south line of TE&L Survey 696.

In Titus County, Roy Davis, Longview, was granted a permit to drill First State Bank 1, (40-ac), 400 feet from north and 600 feet from west line of J. F. Box Survey.

In Van Zandt County, Petroleum Pipe Line & Storage Company, Tyler, was granted a permit to drill S. S. McGee 1, (820-ac), 165 feet from south and west lines of Block 1, Wm. Daniel Survey. Everts Drilling Company, Dallas, was granted a permit to drill J. J. Goode 1, (108-ac), 1000 feet from west and 300 feet from south line of D. Rose Survey.

In Wichita County, Kimbell & Bostic, Burkburnett, were granted a permit to drill H. B. Hines B 4, (160-ac), 300 feet from west and 140 feet from south line of Section 11, H&GN Survey. C. W. Clark, Wichita Falls, was granted a permit to drill J. A. Kemp 3A, (160-ac), 150 feet from south and west lines of M. Roberts Survey.

In Ward County, Gulf Production Company, Fort Worth, was granted permits to drill G. W. O'Brien 29, (640-ac), 330 feet from east and 1132 feet from south line of Section 16, Block F, G&MMB&A Survey; Hutchings 17, 330 feet from west and 1132 feet from south line of Section 5, Block F, G&MMB&A Survey; G. W. O'Brien 30, (640-ac), 660 feet from west and 990 feet from south line of Section 6, Block F, G&MMB&A Survey. Eppenauer Drilling Company, San Angelo, was granted a permit to drill University 1, (160-ac), 330 feet from north and 440 feet from east line of Section 2, Block 16, University Survey.

In Wilbarger County, Luther Webb, Vernon, was granted a permit to drill W. T. Waggoner 1, (40-ac), sw corner of Section 22, Block 4, H&TC Survey.

In Winkler County, S. W. Richardson, Fort Worth, was granted a permit to drill Scarborough 1, (12-ac), center of Section 1, Block WF.

In Young County, Floyd Ard, Jr., was granted permits to drill Belknap 3, (20-ac), 150 feet from north and west lines of TE&L Survey 21; 2, 450 feet from north and 150 feet from east line of Survey. F. F. Craig, Fort Worth, was granted a permit to drill J. T. Lowe 1, (80-ac), 150 feet from north and 450 feet from east line of TE&L Survey 59. F. W. Massey, Wichita Falls, was granted a permit to drill C. V. Newman 1, 600 feet from east and 150 feet from south line of S. Sallee Block 5. Wooten & Reed et al, Graham, were granted a permit to drill A. L. Porter 1, (80-ac), 750 feet from south and 150 feet from west line of W. Cantrell Survey. J. A. Cory, Newcastle, was granted a permit to drill J. B. Terrell 1, (198-ac), 822 feet from north and 150 feet from west line of Crocket & Peveler Survey. C. J. Kleiner, Cisco, was granted a permit to drill C. H. Ledbetter 1, (60-ac), 963 feet from east and 1085 feet from south line of TE&L Survey No. 2248.

South Texas Gets Several Large Wells

San Antonio, Texas.—Several large producers are included in South Texas completions during the past week. They follow:

Company, Well and Location	Init. Prod. Bbls.	Depth
Bastrop County—		
Humble O&R Co., Wilhelm 1, Wolfenberger sur.	1920	2453
Marts & Beavans, C. L. Riddle 1, Gray & Leach sur.	240	2300
Bexar County—		
W. R. Swearingen et al, J. E. Halbardier 13, J. M. Perez sur. No. 57.	11	687
Caldwell County—		
Adams and Lysles, Robertson 1, John Neill sur.	*	2222
Duval County—		
Humble O&R Co., C. W. Hahl 4, sec. 360.	1092	2307
Jim Wells County—		
Magnolia Petroleum Co., A. A. Seeligson 2, No. 218 V. Canales sur.	120	3255
McMullen County—		
Greenwood & Calvert, Z. A. Booth 1, Sec. 21, John Garner sur.	*	1625
Nueces County—		
A. F. Holliday, F. J. Smith 1, Blk. 35, H. B. Shepherd sur	350	4880
Houston Oil Co., E. McGregor 3, Sec. 311.	1200	4864
Starr County—		
Hooks & Weaver, Kelsey Bass 14-2-A, Sec. 6, Por 75-6-7 .	*	1268
Victoria County—		
Gulf Production Co. et al, Keeran 3, M. de Leon sur.	680	5705
Quintana Pet Co., S. W. McCormick, SA & MG sur No. A 31 4.	*	7400
Zapata County—		
Dr. McCormick, Bustamante 1, No. 32, Comitas Grant.	*	1600
Texas Co., Measles et al (Jennings) 17, Cerrito Blanco Grant	75	1207

Company, Well and Location	Bbls.	Depth

South McMullen County Test Reports Oil Showing

San Antonio, Texas.—Jaqua & Crow encountered the Mirando sand at 2370 feet in E. R. Hagist 1, southern McMullen County, where it showed considerable oil. The first five feet of the sand was drilled, then it was cored five feet to 2380 feet, the last two feet being recovered. When tested, it showed mud.

The well is located 330 feet from the north and west lines of an 80-acre tract in R. W. Mills Survey No. 467.

Magnolia Definitely Opens New Jim Wells County Field

San Antonio, Texas.—Magnolia Petroleum Company finally completed A. A. Seeligson 2, Jim Wells County wildcat. At last reports, the well was flowing steadily at the rate of five barrels an hour on choke.

The top of the sand is given as 3247 feet and the total depth at 3255 feet.

This well definitely opens a new field in Jim Wells County on what is referred to as the Premont prospect, likely a deep seated salt dome or dome like structure. It is the first oil production to be established in this particular part of South Texas, it being about 50 miles east of the Mirando district pools and 25 miles west of the Kingsville field. There is no production due south or southeast to the coast, hence, it opens a wide area to play.

The producer is the second well drilled on this prospect, the other being the A. A. Seeligson 1, which showed a little oil from 3414-22 feet, last year. It could not be developed into a commercial producer and was drilled to 6010 feet where it was abandoned.

Location of the new producer is 3000 feet from the east line and 150 feet from the south line of the No. 218 V. Canales survey.

These wells were drilled on a lease block of approximately 22,000 acres held one-half by the Magnolia Petroleum Company, one-fourth by Sinclair Prairie Oil Company, and one-fourth by T. B. Slick Estate.

Its structure was worked out by geophysical prospecting, being checked by both torsion balance and seismograph methods.

Uncertainty of Hilbig Field Delays Line Output

San Antonio, Texas. — Hilbig field, Bastrop County, scored another gusher and probably a dry hole during the week. Humble Oil & Refining Company's Ed Wilhelm 1, Wolfenberger Survey, topped the Serpentine at 2300 feet, drilled to 2453 feet, and is good for 80 barrels an hour on choke. It has not been tested to full capacity due to lack of storage.

The company's P. Goertz 1, A. Mayes Survey, southwest of the big producer, failed to get the Serpentine between the Taylor marl and the Austin chalk, topping the latter formation at 2464 feet. It, however, did top a streak of Serpentine at 2527 feet, and is now coring.

Humble Oil & Refining Company has two other rigs running in the field.

In the Ogden and Reed district, Marts and Beavans' C. L. Riddle 1, Gray and Leach Survey, is flowing between 220 and 240 barrels from 2300 feet. It topped the Serpentine at 2190 feet. It is producing from the Dale lime, which is a conglomerate of chalk and Serpentine.

Bastrop's interesting well is Gant & Wegener and Teas' Mikulec 1, in the William Barton Survey, which cored at 7103 feet, where it likely has the base of the Austin chalk.

Failure of the productive limits of the Hilbig field to extend any appreciable distance to the north and southwest of the discovery well has resulted in Humble Pipe Line Company cancelling its plans to install a six-inch pipe line gathering system. The transportation program also included the laying of a line to connect with its trunk line system near Luling, but this has been thrown into the discard for the time being. Until more light is thrown on the scope of the field, Humble Oil & Refining Company appears content to choke its completed wells to a small yield that is diverted to lease tanks after taking care of fuel oil requirements of its drilling rigs.

Duval County Tests Promise Extensions

San Antonio, Texas.—Outpost wells and wildcats, now being tested, continue to hold interest in Duval County. Several of them indicate important extensions to the present fields.

Atravasada Oil Company's Hernandez 1, Section 574, located in the northern portion of the Sarnosa field, is showing for some sort of producer. It is running tubing at 2478 feet, preparatory to swabbing in. In the immediate area, Magnolia Petroleum Company's M. Ruiz 2, same section, is cleaning out about 70 feet off bottom, and showing for production. It set casing at 2388 feet and drilled to 2398 feet. The hole filled 300 feet in oil in six hours with mud in the bottom.

Over on the Peters ranch, about six or seven miles southwest of the Sarnosa field, Shasta Oil Company is again testing W. R. Peters 1-B, Section 176. The well drilled to 2707 feet, where it made a big gasser, showing some salt water. It was then plugged to 2699 feet, top of the sand being 2682 feet. The same company spudded W. R. Peters 2, Section 175, to a depth of 110 feet with a spudder to hold its leases and is now building derrick.

W. B. Stewart et al's Duval Ranch 1, NE Section 362, nearly two miles due north of North Government Wells field, is in process of completion, having drilled out the plugs. It topped the second Government Wells sand at 2296 feet, drilled to 2310 feet.

Several South Texas Tests Hold Interest

San Antonio, Texas.—Numerous deep tests throughout South Texas hold attention at this time. One Webb County operator is starting up on a probable 10,000-foot test, while a well in San Patricio County is well below 7000 feet. A Bastrop County well was coring below 7100 feet. Fully a score are at 4000 feet or below.

Jacob, Buzzini & Pickett's A. Schroeder 1, F. Anthony Survey, is shut down temporarily at 526 feet, while August Blume is drilling his W. T. Shaw, W. Farquhar Survey, at 410 feet. Both are in Atascosa County.

In Bastrop County, C. C. Shumway et al's Buckner 1, William Jenkins Survey, is spudding. Eastland Oil Company's Riddle 1, William Leach Survey, is drilling Taylor marl at 2120 feet. Gant & Wegener and Tea's Mikulec 1, William Barton Survey, is coring at 7100 feet. Humble Oil & Refining Company's P. Goertz 1, A. Mays Survey, is drilling at 2464 feet; Osborne 1, S. Wolfenberger Survey, is preparing to resume drilling after setting 62 feet surface casing; P. Wolfenberger 1, Wolfenberger Survey, is rigging up. Marts & Beavens' Reyes 1, Addison Lytton Survey, spudded and shut down. Ogden & Reed's C. L. Riddle 1, J. Gray Survey, is shut down after coring serpentine to 2190 feet.

Aztec Oil & Royalty Company's J. M. Taylor 1, Section 13, J. M. Uranga Survey, is drilling at 2600 feet. It is in Bee County. Humble Oil & Refining Company is drilling Imogene Hall 1, Thomas J. Butler Survey, at 1400 feet. John O'Neill et al's Plummer, eight miles northwest of Mineral, is rigging up.

In Bexar County, C. I. Albertson's J. C. Vogt 1, Section 2, McCullough Survey, has set surface casing. George Lysles is reaming about 1100 feet in W. H. Russell 1, Survey No. 6. M. L. Howard is still working with a plug back job on his J. M. Watson 1, No. 16, B. Martinez Survey, now around 1900 feet. Former total depth was 2535 feet. Earl S. Post's J. F. & F. X. Bilhartz 1, F. Rolen Survey No. 48, had a fishing job at 501 feet, but has resumed drilling. J. Morgan Russell's Benno Brotze 2, F. Cardenas Survey, encountered some water at 340 feet, and is shut down for casing. D. L. Tipton is drilling below 100 feet in his A. Gembler 1, M. Gotari Survey. M. E. Trussell et al's K. K. Harring 1, J. Conti Survey, pulled in the derrick trying to pull liner at 1016 feet, but has rebuilt.

In Duval County, Atravasada Oil Company's Hernandez 1, Section 574,

is drilling out plugs at 2478 feet. W. T. Daniels is washing down to set casing in F. J. Smith 1, Section 46, which had a show of oil from 2307-11 feet. Magnolia Petroleum Company is drilling out the plugs in M. Ruiez 2, Section 574, after having a showing from 2388-98 feet. Navarro Oil Company's C. W. Hahl 4, Section 360, is waiting on cement about 2290 feet. Newton et al's Wood-Welder 1, Section 102, was coring at 2320 feet at last reports. Reynosa Oil Company is running tubing in its C. W. Hahl 5, Section 42, depth 2265 feet. Shasta Oil Company is drilling plugs again in its W. R. Peters 1-B, after plugging back from 2707 feet, SLM, to 2699 feet; W. R. Peters 2, Section 175, is spudding. Stanley Smith's Manuel Olivarez 1, Section 80, is coring at 3170 feet. Southwest Drilling Company drilled in its Wendt 8, Section 43, and is now running tubing. W. B. Stewart drilled out the plugs in his Duval Ranch 1, Section 362. His Duval Ranch 2, same section, is still waiting on cement at a total depth of 1567 feet. Sun Oil Company has started rigging up its Cano 3, Section 576, and is clearing locations for Cano 4 and 5. Texas Company is about ready to core for the Government Wells sand in its M. B. Johnson 7, Section 42, down 2250 feet. Whisenant and Trenchard are preparing to move onto their Duval County Ranch Company 1, Section 76.

Nixon, Dove and Power have located their A. Lindig 1, Section 4, Gillespie County, and are starting up.

Luling Oil and Gas Company is starting its August Schuenemann 1, Ben Fequaway Survey, Guadalupe County, while the Magnolia Petroleum Company's E. W. Williams 1, Green Dewitt Survey, is still listed as a location. Buckley Brothers' M. T. Howell 1, J. C. Darst Survey, is moving on materials.

In Hidalgo County, W. M. Doughty 1, San Salvadore Survey No. 9, is reaming at 1027 feet. It is being drilled by Carl & Johnston. N. G. Martin is shut down at 1010 for repairs to his Garcia 1, Porcion 42, Reynosa Survey.

Cole Petroleum Company's E. Vela 1, Survey 588, Share 1, Peyote Grant, Jim Hogg County, is making hole below 1000 feet. D. C. Dewitt is preparing to spud in his A. G. Lopez 1, Section 106.

In Karnes County, Magnolia Petroleum Company is waiting on derrick to commence G. Porter 1, S. Morris Survey. The Texas Company is rigging up on Stewart 1, Asa Mitchell Survey.

J. D. Anderson is underreaming his J. D. Witt 1, Hamilton Survey No. 1923, Kerr County. He plans to run 12½-inch casing to 795 feet. Van Duyn & Hoore's R. W. Nowlin 1, No. 99 J. E. Bettner Survey, is down 702 feet, where it is preparing to underream to set casing.

Paton Brothers are still having trouble with their C. A. Turner 1-B, D. Hudson Survey, Lee County. The well was fishing at 2850 feet. Sayre Oil Company's Rister has shut down at 3170 feet after topping the Edwards lime and indicating sulphur water.

Jacob, Buzzini & Pickett are still shut down after setting surface casing in their O. W. Withers 1, John Parks Survey, Live Oak County. George R. Pinkley & Duval Oil Corporation's Border National Bank 1, Stephen Hays Survey, tested about 300 barrels of salt water at a total depth of 874 feet, and is resuming drilling.

M. S. Holliday's State Bank and Trust Company, Maverick County wildcat on Section 40, is drilling around 262 feet. C. L. Mahaney's Kifuri 1, Section 31, Poindexter and Burns Survey, is down nearly 500 feet.

Jacob, Buzzini & Pickett have started drilling out plugs in L. Jacob 11-A, Section 8, W. H. Jacob Survey, McMullen County, the total depth being 855 feet. Jaqua and Crow encountered the Mirando sand at 2370 feet, went to 2380 feet, showed considerable oil and is making a drill stem test. The well is E. R. Hagist 1, Survey 467. C. R. Pope, Inc., has shut down at 150 feet for repairs to pump on E. L. Miles 1, Section 14, S & M Survey. SR&C Oil Company's LaChuso 1, Section 47, is shut down for water at 2886 feet, but expects to resume immediately. C. C. Shumway et al's Shiner Ranch 2, is drilling below 1000 feet.

Nueces County continues active. Bryan and Murphy's Humphrey 3, Section 406, is rigging up. CNT Oil Company's L. M. Vance 1, Section 402, is drilling at 1450 feet. Gibson Oil Company's Ran Morgan 2, R. Schaeffer Survey, is drilling an oil sand at 4695 feet. Gulf Port Oil Company's Frank Bliss is coring an oil sand at 4748 feet, and is completing R. Morgan 1, Section 403, which has the sand from 4853-58. A. F. Holliday's F. J. Smith 2, Block 35, H. B. Shepherd farm lots, is drilling at 4520 feet. Shasta Oil Company is rigging up on its Meridith 1. Sinclair Prairie Oil Company's T. H. Isensee 1, Section 404, is preparing to set surface casing.

Humble Oil & Refining Company's M. V. O'Conner 4, F. Rios Survey, eastern portion of Refugio County, is down 2360 feet, where it is preparing to set 10¾-inch casing. George E. Smith has reached 3140 feet in his J. W. O'Brien 1, Winfield Survey, having encountered a number of excellent showings. Traylor Production Company's Kay 2, Refugio Survey, is a new operation. United Production Company's M. F. Lambert 1-A, Hews and Brown Survey, is testing an oil and gas sand encountered at 3520 feet.

San Patricio County's deep test, Saxet Oil Company's F. S. Rachal 19, is drilling at 7136 feet. It is in the J. N. Seguin Survey. George W. Scruggs is starting up on N. Collins 1, Block 36, McGloin Survey, after a shut-down at 1500 feet for the past several weeks.

B. & B. Oil Company is waiting on casing for Kelsey Bass 1, Porcion 87, Starr County, which is showing for a gas well at 4514-20 feet. E. R. Cooper's J. M. Martinez 1, Section 135, which reached a contract depth of 2000 feet, is to be deepened. Heavier rotary is now being moved. Goodwin & Yantis are drilling at 1040 feet in M. J. Walker 1, Section 767. Hooks and Weaver are moving onto their Kelsey Bass 15, Section 6, Porcions 75-76-77. Moore and Jenkins are drilling Seabury et al, Share 5, Porcion 75, at 268 feet. Munday and Sons have made a location for H. G. Guerra 1, Porcion 107. Sioux Oil Company's Goodrich-Woods 4, Block 1, Tract 15, Porcion 81, looks like a failure. Cement failed to hold, and several other complications set in. The sand is at 1398-1407 feet.

Victoria County's drilling wells number only two. Stonleigh Petroleum Company's E. B. Terrell 1, R. Machola Survey No. 2, is drilling at 2535 feet. The Texas Company's McFadden 7, A. J. Gray Survey, has been completely rigged up and is preparing to spud in.

Earl Calloway is drilling at 1700 feet in A. E. Gates 1, Section 14, Webb County. Cole Petroleum Company is drilling below 2500 feet in A. Villareal 1, Section 1090. E. M. Jones is rigging up on Callagham 1, Section 603. Moca Oil Company's Duval Ranch 3, Block 22, League 3, ZCSL Survey, is drilling at 520 feet. Montex Oil Company's J. M. Garcia 1, Block 14, Section 720, is drilling at 1165 feet. Gates and Salsbury's A. E. Gates 1, Survey 66, is drilling at 1115 feet. South Texas Oil Company is completing B. Rosenburg 14, Block 16, Survey 271. Wise and Jackson are preparing to spud J. M. Garcia 2, Section 1100. Whisenant and Trenchard are shut down for repairs at 903 feet in Duval Ranch 2, Block 13, Section 101.

Sexton Petroleum Company is drilling around 375 feet in Joe Gutzeit 1, Block 4, R. Flores Survey, Wilson County.

Garrett, Lefevre and Spice's M. Garza 1, Block 53, Las Comitas Grant, Zapata County, is drilling in shale at 1474 feet. Sarah Pappas' Juan V. Cuellar 1, Block 3, Survey 2, Papper subdivision of Porcion 34, recently spudded in. B. W. Roscoe's C. Bustamante 1, No. 33 Comitas Grant, is coring at 1228 feet.

In Zavalla County, Adair and Daniels (Zavalla Oil Company) are drilling Gates 1, Section 13, at 4560 feet.

Jones Has Plans for Really Deep Test in Webb County

San Antonio, Texas. — Edwin M. Jones' test in the north central portion of Webb County is due to be one of the most important wells ever drilled in the Mirando district, due to its probable total depth. While no definite announcement has been made, it is reported that this well will be carried to 10,000 feet if production is not found at a shallower depth.

He has a 16,000 acre block, and is moving in a large rig from East Texas. The location for the well, known as the Callaghan 1, is 1650 feet from the east line and 990 feet from the south lines of Section 603.

It will be remembered that Jones drilled the deepest well in the Gulf coast last year, and set a record for the longest string of casing to be set in a well. The test was the Josephine Mitchell 1-B, Refugio field, Refugio County, which went to 9131 feet.

Gulf Gets Third Well, Third Sand in Victoria County

San Antonio, Texas.—Another new sand likely was opened in the Keeran ranch district, Victoria County, by the Gulf Production Company et al's Keeran 3. The well flowed 340 barrels in 12 hours on five-sixteenths-inch choke, showing 1450 pounds pressure on the tubing. The sand is logged at 5701-5705 feet. Oil is 37 gravity.

This is the third well drilled on this ranch by these operators, each one being a producer and each one from a different sand.

Keeran 3, located 1320 feet northwest of Keeran 1, discovery well, and in the M. de Leon survey, was drilled to 7465 feet. It plugged back several times then sidetracked to the present producing level. When first drilled, this sand was logged at 5698-5702 feet.

The Keeran ranch block consists of 5000 acres and is controlled by Gulf Production Company, C. B. Bunte, Inc., and Victoria Oil Company.

Saxet's Biggest Oil Well Brightens Field Outlook

San Antonio, Texas.—The biggest oil producer in the history of the Saxet field, Nueces County, further increases the bright outlook for a prolific producing area. The well is Houston Oil Company's E. McGregor 3, Survey 311, which is reported as good for 50 barrels an hour on quarter-inch choke and showing a pressure of 240 pounds. It had the sand from 4848-64 feet.

Closely following completion of this well, A. F. Holliday has a big producer in F. J. Smith 1, Block 35, H. B. Shepherd survey. While not gauged, it is spraying a large quantity of oil. The well topped the sand at 4866 feet, and completed at 4874 feet. Deepened to 4880 feet, it increased, showing 1250 pounds pressure on the tubing and 1300 pounds on the casing.

Gulf Port Oil Company, likewise, is completing a well which looms as an excellent producer from the 4800-foot horizon. It topped the sand at 4853 feet, but took only five feet of the horizon. It is preparing to swab in.

Several other wells are on the sand, or coring for it at this time.

Across Nueces Bay in San Patricio County, Saxet Oil Company is drilling in salt water sand in F. S. Rachal 19, J. N. Seguin survey, at 7152 feet.

Mining Petroleum by Underground Methods

Mining petroleum by underground methods in France and Germany is described in Bulletin 351, recently published by the United States Bureau of Mines. The bulletin, written by George S. Rice, chief mining engineer, considers the possible application of these or alternative methods to partly depleted oil fields in the United States where conditions would permit.

It was not until the middle of the eighteenth century that mining for oil was begun. This was at Pechelbronn, Alsace, France, in the Rhine valley about 30 miles north of Strasbourg. Mining then consisted in merely driving short headings into the outcrops of bituminous sand beds to drain the oil. This crude method continued with small production for over a century under French control.

During the World War, the great need of Germans for petroleum products led (in 1916) to sinking shafts to the oil sands in areas which had been more or less depleted by wells and undertaking systematic mining. About the end of the war period, the German company which had been operating the mines and wells at Pechelbronn, also oil wells at Wietze, Hannover, Germany, sank a shaft to the partly depleted oil sands at Wietze.

The geologic formation of the Pechelbronn oil field is unique among oil fields in that the uncemented lens-like oil sands are further divided into blocks by several series of faults. The sands contained little or no water and in the areas tested had been drained by wells of about 16 per cent of the original oil content and practically all of the natural gas; so there has been no difficulty by employing adequate mine ventilation, in driving drainage levels and slopes in the sand. Later it was found good practice to make these levels and slopes in the marl stratum overlying the particular oil sand and drain the contiguous oil-sand area by means of pits and boreholes. In some places the drainage of oil from the sands was stimulated by compressed air injected through special bore holes.

The Wietze formation, like the Pechelbronn, has uncemented sand beds, but these dip steeply around a salt dome. The oil, which is under slight hydraulic head, is found between edge water and the outcrops of the beds which are covered unconformably by Upper Cretaceous strata.

The mine slopes and levels at Wietze are driven directly in the sand beds, and the oil drains into them except from one bed which contains very fine particles of sand. This sand is excavated by the longwall method, hoisted and washed with hot soda solution. As the recovered oil is only about 11 per cent by volume of the sand, the mining method results in the high cost of oil obtained but is important in recovering oil which otherwise would be lost and which is so much needed in Germany.

The bulletin points out that the oil-sand conditions at Pechelbronn and Wietze are seldom or never found in the United State, hence in considering the application of the particular methods in those mines, all the commercial and technical factors should be carefully considered before adoption of a mining method.

Small Gas Hazard

Especially it should be remembered that the natural gas hazard in the Pechelbronn and Wietze mines is relatively small as compared with what is likely to be found in mining American oil sands which are generally deeper and under higher pressure even in partly depleted fields where the wells have been drilled far apart. Before mining is undertaken in any area there must be assurance from tests in wells that the pressure of the gas has been reduced to nearly atmospheric.

The author reviews the various patented and other methods proposed in Europe and this country, of mining for oil, and suggests that as the Pechelbronn and Wietze oil-sand conditions are exceptional and the formation is so rarely if ever found in this country that other methods than those used may have to be chosen. He favors an underground layout similar to that recently employed at Pechelbronn, of entries driven in a tight stratum such as shale, which may lie above or below the particular oil sand, and then drilling

short wells down or up to that sand. He also favors a plan which several have proposed, that gas or water would be forced through systematically placed holes into the sand, to propel the oil into the drainage wells and thence into pipe lines laid in the entries. Compressed air has sometimes been used at Pechelbronn for driving the oil from the sand but the lens-like formation prevents its general effective use.

This proposed stimulative method of draining oil is essentially like that successfully employed in wells from the surface in partly depleted areas of the Bradford field, Pennsylvania. To provide a close checker-work of wells in tight sands at a depth of 1500 feet, for example, many thousand feet of drill hole and casing are required per acre. For the same well-spacing pattern, the mine drainage holes would aggregate in length only a few hundred feet per acre. The cost of two mine shafts and equipment, which would serve several thousand acres, is relatively small per acre unit.

4000-Foot Limit

Under assumed parallel conditions of drainage point spacing, the author presents approximate estimates of cost per barrel of crude oil. These estimates indicate an increasing advantage for the mining method (where conditions are favorable for its application) with increasing depth to the oil sand, up to a critical depth which tentatively is placed at 4000 feet. Below that depth the ground pressure and the high temperature (affecting the miners) would increase mining costs so rapidly that the mining method would not be economic and at some greater depth would become impracticable.

It is pointed out that in planning a mine it is vitally important to install a ventilating system such as would be required for the most gassy coal mine. Although a shale stratum could usually be found that would be generally impervious to gas, oil, and water it might be faulted or have porous places which would leak under the high pressures required to stimulate drainage. Furthermore, care would have to be exercised not to use too high stimulative pressures which would cause the roof to cave or the floor to burst.

Detailed plans of mining and of organization are presented, and approximate estimates of production cost per barrel of crude oil for specified conditions of formation, depth, and oil production per acre unit are given.

The cost of crude oil production by mining methods within limitations varies almost directly with the recovery per unit area. Where conditions are favorable, mining methods in depleted oil fields will recover oil otherwise lost and may bring in satisfactory returns when the price of oil is over $2.25 per barrel and where at least 5500 barrels of oil are obtained per acre. With an increase in production per acre, the minimum price permitting profitable operation would be lowered proportionately.

Copies of Bureau of Mines Bulletin 351, "Mining Petroleum by Underground Methods," may be obtained from the Superintendent of Documents, Government Printing Office, Washington, D. C., at a price of 15 cents.

Leesville Is Nearing 500,000-Barrel Mark

Houston.—Completion this week at Leesville, La Fourche Parish, of The Texas Company's L. L. E. Leesville 6, a work-over, for 1608 barrels of 28.1 gravity oil will probably mean the company will be able to boost the total recovery of oil from the field to 500,000 barrels by June 30.

Through March 31 L. L. E. Leesville Nos. 2, 3, 4, 5 and 6 had produced a total of 469,173 barrels of oil. The 640 pound pressure on the half inch choke through which No. 6 is flowing from 3756 feet indicates sufficient kick to justify expectation of reasonably sustained production.

Cranfill-Reynolds Austin County Wildcat Abandoned

Houston.—Immediate prospects of production in the James Cummings Hacienda of Austin County received a set-back this week when Cranfill-Reynolds and Caracas Petroleum Corporation of Venezuela abandoned J. B. Lewis Estate 1 in shale at 4515 feet.

Lewis 1 is located in a 147 acre tract. It encountered no showings of commercial importance, and at 3080 feet was reported to be running low.

Hard Luck Visits Two Colorado County Tests

Houston.—Hard luck visited two important wildcats in Colorado County this week, delaying development of the Garwood prospect discovered last year by Coyle-Concord Oil Company as an area capable of producing commercial gas and some distillate.

After cementing 12½-inch casing Danciger Oil Refining Company had torn down the rig on Raver 1, BBB&C RR Survey No. 1, intending to install a heavier rig. A reversal of opinion

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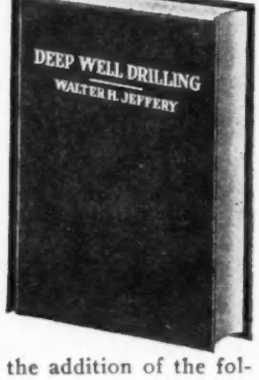

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Preparatory to writing the new book, the author spent weeks in a first hand study of modern methods of drilling by the rotary system, and of completing wells, controlling high pressures and operating wells in the deep fields of California and Oklahoma.

The third edition contains 816 pages, 150 pages more than the second edition, and 452 illustrations, but the price is the same, $6.00.

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caused re-rigging to be necessary on the original rig, keeping the hole at 787 feet for another week.

Humble Oil & Refining Company's John R. McLane 1, had drilled to 4580 feet. It was necessary to plug back to 3600 feet. This wildcat, located in the northeast corner of Section 42, I&GN RR Survey, previously tested salt water at 4117-62 feet.

Drill Stem Test On Polk County Wildcat Shows Mud

Houston.—Results of a drill stem test at 4235-83 feet in Shell Petroleum Corporation's Davis Holmes 1, wildcat well being drilled in the Sunshine district of Polk County, were rather disappointing to those who have been heralding this area as one which would present the Gulf Coast with its next oil field.

Davis Holmes 1 made a 26 minute test, showing 56 feet of mud and a small amount of gas and oil, but no salt water. Previous shows encountered at 3520-35 feet and at 3630-42 feet were not considered important enough to test.

This wildcat, located 1000 feet south of Dick Schwab's discovery well in the area completed late last year, topped the Hockleyensis at 3572 feet, which is said to be lower than that marker was encountered in Schwab's well. Elevation of the Shell well is 222 feet.

Two Producers at Iowa; Another Expected Soon

Houston.—Two wells produced commercial oil and third showed for production this week at Iowa field, located on the Calcasieu-Jefferson Davis Parish line.

Magnolia Petroleum Company's Wait 3, Section 12-9s-7w, flowed 401 barrels in 12 hours through a quarter-inch choke. The well, bottomed at 6975 feet, is producing eight per cent wash water.

Shell Petroleum Corporation's Heyd 3, Section 13-9s-7w, flowed 171 barrels of oil and two million cubic feet of gas in 18 hours from three feet of sand at 5539 feet. Tubing was run to 5536 feet. The well probably will be deepened. Shell's Stafford 1, Section 18-9s-6w, topped an oil sand at 6934 feet and was coring in that formation at 6936 feet April 7. Its completion is expected in a fortnight.

Houston, Texas.—Construction work is now in progress on five of the seven 93,000-barrel capacity steel storage tanks reported recently as having been purchased by Sinclair Refining Company to augment storage at its refinery on the Houston Ship Channel. The tanks are to be welded, and each will be equipped with the Wiggins floating roof.

Hufsmith-Tomball Holds Gulf Coast Interest

Houston.—Hufsmith and Tomball areas of Harris County continued the center of interest of Texas Gulf Coast wildcat activities this week with three tests drilling and locations announced for several more.

Carson and Comiere Drilling Company's Cora V. Peden 1, formerly a project of Weatherall Oil Company, located in the center of an 160-acre tract in the John Brock Survey, is the most recent wildcat to start drilling in the area. March 7 it was standing with 600 feet of 10-inch casing cemented.

Polk Drilling Company soon will spud D. P. M. Corporation's Malcomson 1 in the A. Shouten Survey, rigging up having been well under way the latter part of the week.

Magnolia Petroleum Company has two active tests in the Hufsmith-Tomball area. Martens 1, having obtained a satisfactory cement job on 13⅜-inch casing at 1110 feet, had proceeded to below 2340 feet. This wildcat is in the Joseph House Survey. Kobs 1, the second Magnolia test to spud, is standing cemented with 18⅝-inch at 81 feet. Kobs 1 is 2½ miles southwest of Tomball.

In addition to the above, D. W. Moore has been granted a permit for two locations at Hufsmith and Merry Brothers have been granted permit for a well.

Danciger Oil Refining Company's Hunt 2, wildcat in the Pledger neighborhood of Brazoria County, was reported drilling below 3500 feet in gumbo.

Rycade Oil Corporation and Amerada Petroleum Corporation's Seaburn 3, an attempt to extend Stratton Ridge field, Brazoria County, 1½ miles east, was fishing at 4200 feet. Tri-Fin Oil Company's Moers 1, six miles southwest of Alvin, was drilling below 4800 feet.

In the semi-wildcat district of Manvel, Brazoria County, The Texas Company's Davis 1 is drilling below 2750 feet after setting 13⅜-inch casing at 1238 feet; Natali 1 is in shale and lime at 4360 feet.

The only recently active wildcat in Brazoria County, C. W. Atkins and J. O'Neil's Clay 1, 15 miles north of Navasota in the Walter Sutherland Survey, shut down for orders in shale at 3534 feet this week.

Pure Oil Company's Mayes Estate 17, Lost Lake district of Chambers County, had a light showing of oil in hard, sandy shale at 2808 feet, but it is not probable an attempt will be made to complete the well at this depth.

Plymouth Oil Company's F. L. Ream 1, Section 47, I&GN RR Survey, Colorado County, testing a 4700-acre block near Coyle-Concord Oil Company's Garwood discovery gasser, drilled to below 4250 feet this week. Fabriguze and Pool are moving in a rig for Lake Side Irrigation Company 1, located in the Patrick Reel Survey, Eagle Lake prospect.

In Grimes County, M. D. Masden's G. W. Dodd 1, T. Jones Survey, has shut down at 790 feet. W. J. Brightwell's J. A. Combs 1, Samuel Beauman Survey, Bedias district, is washing to bottom at 5493 feet.

Houston Oil Company and Republic Production Company's Ariola Fee 3, Ariola prospect, Hardin County, was reported drilling below 3040 feet in shale. In the same county, Danciger Oil Refining Company's Hooks 1, a flank test at

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Batson, was drilling below 3560 feet in shale.

In Harris County, Green Bayou Oil Company was reported below 1700 feet in P. S. Griffith 1, T. Bell Survey. Webster Oil & Gas Company had abandoned Grissom 1 at 2010 feet. It is in the John Dickerson Survey, Webster district. A second test in the Webster district, Texana Oil Company's J. W. Goar 1, Sarah McKissick Survey, is waiting on a rig at 50 feet. H. B. Jordan et al's W. S. Cochran 1, northwest of Hockley field and in the J. Jordan Survey, is rigging up on a second derrick after having lost the first as a result of a wind storm.

The Texas Company probably will spud during the week ending April 15 on I. N. Mitchell 1, Clements Subdivision, Stephen F. Austin League, Jackson County. This wildcat, located north of the town of Lolita, is being drilled on the strength of a geophysical survey and surface indications.

Three miles northeast of Port Arthur in Jefferson County, Coast Oil & Gas Company's J. O. B. Young 1, Joseph Grigsby Survey, was drilling in shale at 4770 feet. Two miles west of Sabine, John McGaffey Survey, Elam & Denny have shut down at 3375 feet in Broussard 2.

Toner and Purdy's Martha E. Roberts 1, Joaquin F. de Rumayor Survey, Liberty County, this week was temporarily abandoned at 5300 feet.

Two interesting east flank tests at Hankamer, Liberty County, are rigging up this week. They are: Yount-Lee Oil Company's E. W. Boyt 1, Section 17, H&TC RR Survey, and Gulf Production Company's Crowe & Jacobs 1, Section 21, same survey.

Eight wildcat operations are listed in Matagorda County. Cockburn Oil Corporation's Hawkins 1, Sheppards Mott, has plugged back to 1500 feet after having failed to get out of the hole at 2150 feet. Coombs' Wadsworth Ranch 1, Sheppards Mott, is standing at 1100 feet pending outcome of Cockburn's wildcat. In the Pledger district Humble Oil & Refining Company's Pierce Estate 2, Wm. C. Carson Survey, is drilling in shale below 1420 feet.

United North & South Development Company, disocverer of a new deep producing horizon at Buckeye last year, has several tests under way in Matagorda County. Sheldon 1, or Unit 25, No. 1, is a location 415 feet from the north and 240 feet from the east line of Block 25, J. S. Keller Survey. Unit 14 No. 1 was drilling gummy shale at 4610 feet. Unit 1 No. 1 was sidetracking at 7720 feet, being a work-over. Unit 6 No. 1 was fishing for drill stem at 6055 feet.

In Montgomery County, C. J. Daniel & Hoppess had shut down on Sailes 1 after drilling to 2200 feet. This well is in the W. Barker Survey in the southern part of the county. Previously it remained shut down at 1624 feet for several weeks. In the J. Kronkite Survey, A. H. Parson's Drought 2, a 4000-foot contract job, was reported to have encountered a sand showing gas at 4050-60 feet.

Joseph L. Anderson's E. I. Duke 1, Ace dome prospect 12 miles southeast of Livingston, stopped drilling with bottom at 4730 feet when surface casing collapsed at 750 feet. Roxie Oil Company's Collins & Kavanaungh 1, also in Polk County, was drilling in shale below 3030 feet. This test is about a mile north of the area being prospected by Shell Petroleum Corporation, successor to holdings of Dick Schwab in Polk County. Williams & Carlisle's McDonald 1, 2200 feet southwest of Sunshine Oil Company's No. 1 in the old Sunshine district, with an elevation of 275 feet, topped the Hockleyensis at 3249 feet, reported an oil show in broken sand and shale at 3265-75 feet, and proceeded to core ahead into shale at 3411 feet.

An isolated Polk County wildcat, Boone, Clarke and Boone's Texas Long Leaf Lumber Company 1, four miles east of Leggett and in the D. B. McComb Survey, is a location.

In San Jacinto County, Weaver et al's Delta Land & Timber Company 1, James W. Robertson Survey, is drilling below 3100 feet after having been delayed with a bridged hole at 2100 feet.

In Trinity County, L. G. Priest's J. B. Gibson 1, W. N. Beardsley Survey, has

Status of Conroe Field Operations As of April 6, 1933

Operator	Wells Drilling	Rigs	Derricks	Locations	Active Operations	Wells Producing	Pipe Line Runs
Alpha Petroleum Corp.	3	0	0	1	4	8	999
Amerada Petroleum Corp.	1	0	0	0	1	3	429
A. & P. Oil Co.	1	0	0	1	2	0	....
Bishop Oil Company	2	0	0	1	3	1	126
Boxrollium Pet. Corp.	0	0	0	0	0	1	47
Butler & Horne	0	1	0	0	1	0	....
Danciger Oil Refining Co.	0	0	0	0	0	1	126
Farlyn Oil Company	0	0	0	1	1	1	143
Feltex Oil Co. & Conroe Oil.	0	0	1	0	1	1	126
Feltex Oil & Kerby Pet.	0	0	0	1	1	1	132
Gem Oil Company	0	0	0	0	0	1	68
Giesecke & Craft	0	0	1	0	1	0	....
John Glassell	1	0	0	0	1	0	....
Goldston & Humble O. & R.	0	0	0	0	0	1	126
Gulf Coast Dr. & Prod. Co.	2	0	1	4	7	7	1,261
Hamilton, Hill & Hill	1	0	0	0	1	4	487
Harrison & Abercrombie	3	0	1	3	7	8	890
Hi-Grade Oil Co.	0	1	0	1	2	0	....
Hooper Oil Co. & Rutherford.	0	0	1	0	1	4	507
Houston Oil & Tide Water	2	0	0	7	9	14	1,620
Humble Oil & Ref. Co.	13	2	1	4	20	135	15,849
Lafayette Oil Co.	0	0	0	0	0	1	126
W. M. Massey, Receiver	1	0	0	0	1	4	504
McAlbert Oil Company	1	0	0	0	1	1	126
Moore & Bruton	0	0	0	0	0	2	257
Mortex Oil Company	0	0	0	0	0	1	979
Navarro Oil Company	1	0	0	0	1	4	370
Neuhaus & Horne	1	0	0	0	1	0	....
Neversuch Oil Company	1	0	0	0	1	2	252
North Star Oil Company	0	0	0	1	1	0	....
James Papadakis	0	0	0	0	0	1	32
Republic Production Co.	1	0	0	0	1	0	....
Showers & Moncrief	1	0	0	0	1	2	252
Skelly Oil Company	0	0	0	0	0	1	88
Skelly & Conroe Oil Co.	0	0	0	0	0	2	200
South Gulf Oil Company	0	0	0	2	2	2	992
Southern Drilling Company	0	0	0	0	0	1	47
Southern Liberty Co.	1	0	0	0	1	0	....
Southland Oil Company	0	0	0	1	1	4	368
Standard Oil of Kansas	1	1	0	0	2	7	909
Steinberger, Brown & Wheeler	0	0	0	0	0	4	400
Steinberger, Word et al.	0	0	0	0	0	2	235
G. W. Strake (personal)	0	0	0	0	0	1	126
Strake Pet. Corp. of Del.	1	0	0	0	1	1	100
Sun Oil Company	7	0	0	0	7	2	296
The Texas Company	8	0	1	8	17	28	3,406
Tide Water Oil Company	1	0	0	3	4	2	231
Tide Water & Republic	2	0	0	1	3	4	501
Tide Water & Strake	5	0	0	2	7	22	2,736
49 Operators	62	5	7	42	116	292	36,469

shut down at 1021 feet, at which depth the well bailed dry.

Republic Production Company is rigging up in the Spurger area of Tyler County on Sterne Fee 2-E-1014, 1300 feet south and 400 feet west of the discovery well. Both are in the Adolph Sterne Survey.

Trapshooter Riley Oil Company spudded and drilled below 461 feet in Menke 1, a wildcat located in the Juston Liendo Survey, Hempstead district of Waller County.

Cline, Taylor et al's E. C. and T. B. Chadwick 1, Isaac Lee Survey of Washington County, has spudded the water well. Unless rigs are changed, this test will not be drilled deep enough to afford any important geological revelations.

In Wharton County, Pure Oil Company's Stewart 1, five miles south of Louise, cored sandy shale at 5719 feet. Smith, McDannald and Shell Petroleum Corporation's Mitchell 1, three miles north of El Campo, is shut down for orders at 6875 feet, where rests 436 feet of drill stem.

Gueydan Test's Rate of Flow May Show Increase

Houston.—Performance of Pure Oil Company's Mulvey Irrigation Company 2 at Gueydan, reported April 7 as flowing 216 barrels of fluid per day through 2½-inch tubing set near bottom at 4850 feet, is expected to improve as the well cleans itself. Present performance of the well is handicapped by presence of a swab and 300 feet of line in the hole. Mulvey 2 set 31 feet of seven inch screen.

On Mulvey 3, Pure's other test on this Vermilion Parish dome, is in a sandy shale showing a small amount of oil and gas at about 4038 feet. This stratum will probably not be tested due to presence of salt water in the recent cores taken around that level. Production will be sought deeper.

Work Started on Gas Line from Van Field

Tyler, Texas.—Construction work was started by the United Gas Public Service Company late last week on the laying of about 15 miles of 10-inch welded natural gas line from the Van field natural gasoline plant of the Pure Oil Company and other unit members to Mineola station on the former's trunk line that delivers gas from Louisiana and East Texas border fields to industrial plants at Dallas and Fort Worth. About 15,000,000 cubic feet of residue gas is available at the Van field plant, and it is reported that a long term contract has been made to dispose of a large portion of same to the above natural gas concern.

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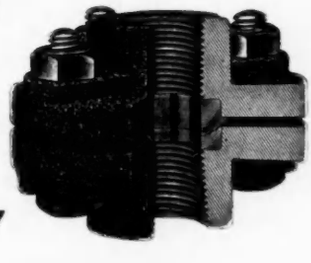

South Louisiana Wildcat Developments Interesting

Houston.—Completion of several interesting wells in semi-wildcat areas of Louisiana Gulf Coast this week more or less took the play away from the rank and file of wildcat drilling in that region, although several of the wildcats developed interesting findings.

In the Dry Creek region of Allen Parish, rigging up is under way on O'Brien Brothers, Incorporated's, Long Bell Mineral Corporation 1, NW SW Section 34-4s-6w.

Two interesting tests of Rio Bravo Oil Company at Darrow dome, Ascencion Parish, are being closely watched as one of them is expected to make a pumper at the present depth if drilling is not continued. Community 2 is waiting orders in oil sand at 4827 feet. Gumble Lumber Company 1 is drilling ahead below 5824 feet.

Assumption Parish is to have another wildcat test this week following announcement of location for Barnsdall Oil Company's Williams 1, Labadieville prospect, 10 miles northwest of Thibodaux. Williams 1 will be drilled 330 feet out of the northeast corner of Section 38-14s-14e, to which site a canal is being dug.

Pure Oil Company's Yount-Lee 11, deep test in Sweet Lake field, was drilling hard shale and lime at 7138 feet.

In Evangeline Parish, O'Brien Brothers, Incorporated, have announced location for Samuel Haas 1, 3597 feet west and 359 feet north of the southeast corner of N½ Section 23-4s-1w.

Standard Oil Company of Louisiana is moving in a rig for Myrtle Grove-Wilbert 4, Choctaw dome, Iberville Parish.

At Roanoke, Jefferson Davis Parish, drilling was stopped by a kinked line shaft on Humble Oil & Refining Company's Devilbiss 2 at 1934 feet. Devilbiss 1, located 200 feet north, recently was abandoned by Humble as a result of mechanical difficulties.

Stanley A. Thompson's Delecroix Farms 1, Olevier prospect in St. Bernard Parish, was reported in shale at 6175 feet. Two other wildcats are active in this parish, both being put down by Southern Sulphur Company. State Lake Lery 1 is a derrick at the Olevier prospect, and State Lake Borgne, at the Shell Beach prospect, also is a derrick.

In St. Landry Parish, Gulf Refining Company of Louisiana's Wilson Cochran 4 was reported drilling below 3142 feet.

There are three active tests in Vermilion Parish. Two at Gueydan are being drilled by Pure Oil Company on Mulvey Irrigation Company property. Mulvey 2 is showing for a producer at 4850 feet. Mulvey 3 cored sand and shale with a slight show of oil at 4038 feet. Shell Petroleum Corporation's B. C. Hebert 1, 30 miles southeast of Gueydan and in Section 10-15s-1e, is reaming at 6289 feet.

Interesting Deep Test Completed at Esperson

Houston.—One of the most interesting completions in the Gulf Coast in several weeks was brought in this week by Cranfill-Reynolds Oil Company at Esperson dome, Liberty County.

Moores Bluff 10 was drilled to 7077 feet; set screen at 7069-75 feet; and had an initial production of 90 barrels of 31.7 gravity oil. Casing pressure on the well initially was 900 pounds; tubing pressure, 800 pounds. Oil production dwindled to a spray shortly after completion, but the pressures remained constant.

Conroe Contributes Nearly All Gulf Coast Flush Oil

Houston.—With the exception of one 1488-barrel well in Rabb Ridge field, all of the Texas sector of the Gulf Coast's initial production for the week came from Conroe field, where 15 wells had an aggregate initial of 31,680 barrels, or 2112 barrels per well.

In addition to the 16 producers, nine dry holes brought the week's completions up to 25, a figure which is considerably below what field results in the Texas Gulf Coast have been for several weeks. The total initial production of 33,168 barrels also is below the past week's average.

A detailed list of completions follows:

Company, Well and Location	Init. Prod. Bbls.	Depth
Austin County—		
Great Southern Dr. Co., F. Schovajsa 1, S. F. Austin 4 Leagues Sur.	*	3505
Brenham Dome—		
Yegua Oil Corp., Pomical 18...	*	1515
Burleson County—		
Poor Boy Oil Co., Polansky 1, M. B. Lawrence Sur.	*	2306
Conroe Field—		
Humble Oil & Ref. Co., Alenius		
Chisholm 1	2808	5146
Cartwright B-2	2400	5134
Dobbins 7	2112	5123
B. E. Jones 2	2472	5131
Madeley 30	1896	5162
South Texas Development Co. A-33	2400	5167
R. Wiggins 1	2136	5141
J. C. Young 1	2088	5110
Navarro Oil Co., Brown & Schaffer 1	1800	5127
Steinberger, Brown & Wheeler, South Tex. Dev. Co. 3	1560	5120
Strake Pet. Corp. of Delaware, O. Etheridge 1	2160	5125
The Texas Co., Elizabeth		
Moody 10	2400	5118
Elizabeth Moody 17	1800	5130
Tide Water Oil Co., Granger 1	1008	5074
Tide Water Oil Co. and G. W. Strake, Lewis Estate 17	2640	5125
Hull Field—		
Hannah Oil Co. and Bashara, Bashara 1	*	3665
Madison County—		
Andrews and Terry, Bullard 1, 4 mi sw Madisonville	*	112
Montgomery County—		
C. C. Steinberger et al, F. B. Swift 1, R. Rogers Sur.	*	5025
Port Neches Field—		
The Texas Co., Stark 4, M. Beauchamp Sur.	*	4851
Rabb Ridge Field—		
Humble Oil & Ref. Co. and Gulf Prod. Co., Lockwood & Sharp A-13	1488	5300
Trinity County— (Woodlake Community)		
Scientific Producers Co., Thompson 1, Sec. 50, I&GN RR Sur.	*	2473
Tyler County— (Spurger District)—		
Republic Prod. Co. & Houston Oil Co., Kirby Lbr. Co. 1-E 1016	*	5447

Company, Well and Location	Bbls.	Depth

Extra Copies of
GULF COAST ISSUE

Extra copies of the Gulf Coast issue of The OIL WEEKLY (March 20th) which contain map of Gulf Coast territory, data on each field and prospect, etc., can be had by writing The OIL WEEKLY, Box 2811, Houston, Texas, and enclosing 50 cents in stamps for each copy desired. A limited number of copies of this issue are available.

Four Commercial Wells In Louisiana Gulf Coast

Houston.—Four wells in Louisiana, one each in four fields, were completed as commercial producers with a total initial production of 3713 barrels, representing the greatest number of oil wells and the greatest amount of initial production from this section of the state for a number of weeks.

The best well of the lot was The Texas Company's State Lake Barre 21 at Lake Barre, completed for 1765 barrels of 29.5 gravity oil through an inch choke. Screen was set in 29 feet of sand bottomed at 3830 feet.

The other completions follow:

Company, Well and Location	Init. Prod. Bbls.	Depth
Edgerly Field—		
C. O. Noble, Hunter 6	100	3720
Lake Barre—		
The Texas Co., State Lake Barre 21	1765	3830
Leesville—		
The Texas Co., L. L. E. Leesville 6 (wo)	1608	3756
Lockport—		
Magnolia Petroleum Co., Miller 33	240	3855

Company, Well and Location	Bbls.	Depth

Shallow Converse Well In North Louisiana

Shreveport, La.—The third shallow producer for the Converse field of Sabine Parish, six miles north of Zwolle was officially gauged and completed last week. The new well, located almost on a direct line between the two other producers which are three miles apart in a northeast-southwest line, is Joe Modisette's Frost Lumber Company 1, 330 feet south and west NEc Section 20-9-13. It gauged 60 barrels daily through two-inch tubing set with packer. Total depth is 1890 feet in Annona chalk logged at 1828 feet; elevation is 282 feet. Eight-inch casing was cemented at 1535 feet, which was the marl contact point.

Modisette has already made location for a second test, Frost Lumber Company 2, an offset, located 330 feet south and west NEc NW NW Section 21-9-13.

Three completions and one new location were recorded in the Zwolle field, Sabine Parish. The new location is Pugh and Hickman Drilling Company's Blackman 8, located 330 feet north and west SEc NW NW Section 36-8-12. A well which is not in the week's completions list due to lack of a 24-hour gauge is Zwolle Production Company's Mallory & Tatum 1, located 550 feet east and 330 feet north of center Section 25-8-12, in the Zwolle east field, completed at total depth of 2374 feet in chalk flowing at the rate of 80 barrels per hour through quarter-inch choke. Marl was logged at 2336 feet and six-inch casing was cemented two feet below that point. This well is approximately three quarters of a mile northeast of Pugh and Hickman Drilling Company's Blackman 2, Section 36-8-12, a 3000-barrel flowing well and about the same distance west of Magnolia Petroleum Company's Ginratt 1, Section 30-8-11, a well completed as a 540-barrel well that later rose to 2100 barrels daily.

The old Pine Island district of Caddo Parish last week accounted for one producer and one location, the latter being Roberts and Wimberly's J. S. Noel 1, 350 feet south and 300 feet east NWc NE Section 12-20-16. The Texas Company's D. H. Raines 20, located 1170 feet east and 150 feet north SWc SE Section 15-21-15, is pumping 15 barrels of oil 1700 feet after use of acid, this being the chalk horizon in the old Pine Island field.

On the south side of the old Bellevue shallow structure of Bossier Parish, where production was found in the Nacatosh at 300 feet, the field finally being abandoned in 1931 after producing for 10 years, E. B. Williams and associates have spudded Allen Heirs 1, located SW SE SW Sec-11-18-11, cmented 10-inch casing at 80 feet and are drilling ahead. Another location made last week that has already spudded is Lamo Oil & Gas Corporation's T. J. Fleming 1, located 500 feet south and 175 feet east NWc Section 31-12-13, DeSoto Parish, which cemented 10-inch casing at 300 feet and is drilling below 320 feet.

Jack Whitson had to junk and abandon Sanders 1, located 330 feet north and east SWc Section 19-11-13, DeSoto Parish, at 2765 feet after an unsuccessful fishing job. This well showed for a producer at this level; elevation is 285 feet. Whitson is putting his rig up on Sanders 2, located 480 feet north and 430 feet east SWc Section 19-11-13.

Completions last week in North Louisiana follow:

Company, Well and Location	Init. Prod. Bbls.	Depth
Caddo Parish (Pine Island)—		
The Texas Company, D. H. Raines 20, 15-21-15	15	1700
Caddo Parish (Blanchard)—		
Louanna O.&G. Co., Inc., 29-19-16	*	2815
DeSoto Parish—		
Jack Whitson, Sanders 1, 19-11-13	†	2765
Sabine Parish (Converse)—		
Joe Modisette, Frost Lbr. Co. 1, 20-9-13	60	1890
Sabine Parish (Zwolle)—		
G. E. Jordan, Dew 1, 34-8-11	35	2635
D. M. Lide et al, Steinhorst 1, 33-8-11	180	2471
Pelican Nat. Gas Co., Four L 20, 8-7-11	50	2716

Company, Well and Location	Bbls.	Depth

Four Permits to Drill In North Louisiana

Shreveport, La.—Four permits to drill were issued in Louisiana during the week, all of them for wells to be drilled in the northern sector of the state.

In DeSoto Parish, Lamo Oil & Gas Corporation, Mansfield, was granted permit for T. J. Fleming 1, 500 feet south and 175 feet east NWc Section 31-12n-13w, and Jack Whitson, Shreveport, was granted permit for Mrs. Vera Sanders 2, 480 feet north and 430 feet east of SWc Section 19-11n-13w.

In Sabine Parish, Joe Modisette, Shreveport, was granted permit for Frost Lumber Co. 2, 330 feet south and west NEc NW NW Section 21-9n-13w, and Pugh-Hickman Drilling Company, Shreveport, was granted permit for W. M. Blackman 4, 330 feet south and east of NWc NE NW Section 36-8n-12w.

Twist-Off Delays Bailing Test of Washita Wildcat

Shreveport.—Bailing of Sandfield Oil & Gas Company's Bowman-Hicks 1, NE NE Section 26-9-13, Sabine Parish, the first test to reach the Washita since the shallow oil field at the 1500-1900-foot level was uncovered at Converse, was delayed last week when the bit and about one half a joint of pipe were lost in the hole while preparing to drill plug. Part of the cement had been drilled when the twist-off occurred. This test showed from three to five million cubic feet of gas at 3403 feet in Washita before casing was cemented at 3236 feet; elevation is 302 feet.

Wildcatting in North Louisiana was retarded somewhat last week by heavy rains, windstorms and bad roads. In Bossier Parish John L. Anderson, Trustee (Puritan Oil Company) shut down at 1040 feet in Leonard 1, Section 19-19-13, because of high water. In the same parish A. W. Phillips, Trustee, is waiting orders at 1704 feet after testing dry in Ray Oden 1, NW NW Section 4-18-13.

In Caddo Parish Gibson Oil Corporation's J. H. Dominick 1, NE SW Section 31-23-14, on a 7500-acre block is drilling at 2260 feet.

In Claiborne Parish, United Gas Public Service Company's Meadows 1, NE SE Section 13-21-5w, is coring below 4760 feet and the same company's M. E. Temple et al, Section 21-23-7w, is coring below 3840 feet.

In De Soto Parish, Mrs. Aleene Ibach, Trustee's Rambin Estate 1, NW NE Section 32-11-11, is coring below 3450

feet. In the same parish E. T. Oakes' Johnson 1, Section 30-13-15, is coring shale and shells at 4665 feet in lower Cretaceous. Carroll and Holden who took over Warren & Craig's Wagner 1, Section 5-12-14 in the same parish is sidetracking at 2880 feet.

In Jackson Parish A. C. Thomas has spudded J. W. Johns 1, SE NE NE Section 25-15n-3w and is drilling below 385 feet.

The Converse field where there are now three shallow commercial wells is leading North Louisiana in wildcat activity. The following tests in that part of Sabine Parish are active:

Chief Oil Company's Bowman-Hicks 1, NE NW Section 36-9-14, logged base of Annona chalk at 1912 feet and later was drilling in that same formation at 1975 feet.

Evans Brothers' Cranford 1, SE SE Section 20-9-13, is standing hole full of oil and has made one head at total depth of 1575 feet. Owners are arranging to run tubing with packer. Feazel & Davenport's Aaron & Musser 1, NW NW Section 32-9-13, is drilling below 1900 feet heading for the Washita horizon and passing up the shallow pay horizon. High water is hampering R. L. Gay, Trustee, getting rig to Long Bell 3, SE NE NE Section 5-8-13 which will go to the Washita level. Part of the rig is in. Head & Lambert are arranging to resume at 2044 feet, two feet below base of Annona chalk, in Edwards 1, SW NW Section 29-9-13. R. T. Henderson continues swabbing Sistrunk 1, SE NW Section 9-9-12 at 2078 feet with considerable oil showing. H. C. Lessenger is hauling in eight-inch casing to cement in Bowman-Hicks 1, NW SW Section 13-9-13, after getting a good oil show at 16-10-12 in Saratoga chalk. Elevation is 275 feet.

Status of other North Louisiana wildcats was unchanged last week.

Louisiana Tornado Misses Most of the Oil Fields

Shreveport.—A tornado that swept through parts of the South Arkansas oil areas March 30, and leveled approximately 50 derricks, most of them in the Smackover field, caused a recession in the daily yield of Arkansas last week, the average falling 3350 barrels to 27,125 barrels. Smackover, light, was down to a new low mark of 2125 barrels and heavy Smackover to 19,300 barrels.

North Louisiana was hit in several places by the tornado but it hit only one oil field, eight steel derricks of Magnolia Petroleum Company in the old Bull Bayou district of Red River Parish being leveled. Estimated loss to company houses, warehouse, etc. there was estimated at $25,000.

One Abandonment Replaced By New Start in Arkansas

Texarkana, Ark.—One new location was made and one location was abandoned in Arkansas last week, both being in the Fort Lynn wildcat area of Miller County. The new location is Captain E. Byrd's Westmoreland 1, NWc SE NE Section 8-19-27w. The location abandoned is Molar Oil Company's A. M. Gibson 1, NW SW Section 30-18-27w.

In LaFayette County Charles McDonald et al's derrick was blown down by a tornado at Allen 1, Section 11-19-26, at 3270 feet but is being rebuilt. Sam Wilson, Jr., is drilling below 2300 feet in Red River Lumber Company 1, SW SW Section 19-19-25w.

In Lincoln County Lawrence B. Cook, Trustee's McGehee Plantation 1, NE SW Section 5-8s-7w, is shut down at corrected depth of 4240 feet.

In Little River County American Portland Cement Company's Fee 1, SW NE Section 21-12s-32w, is drilling below 2170 feet.

In Miller County, Bridwell et al's Barker 1, NW SE Section 31-17-26, is rebuilding derrick at 3120 feet. In the same county Duluth-Arkansas Oil Company's H. Z. Price 1, NE NE Section 18-16-25, is drilling below 3177 feet. Fitzwater et al's Norsen 1, SE SW Section 34-16-26, shut down for several months at 1945 feet, has resumed and is making hole below 2018 feet. J. T. Humphreys et al's R. G. Grace 1, SW NW Section 9-15-27, has cemented 10-inch casing at 200 feet. Another well inactive for several weeks in Miller County that resumed last week is Sorrells & Tidwell's McCowan 1, NW SE Section 22-15-28, drilling below 2770 feet.

In Union County, F. O. Henderson's J. F. Sample Company 1, NW NW Section 1-18-16, is drilling below 2518 feet. In the same county Tom Nash et al's Union Sawmill Company 1, NW NE Section 19-18-11, is drilling below 2470 feet.

The status of other Arkansas wildcats was unchanged last week.

Monroe County, Mississippi Test Showing Gas; Coring

Jackson, Miss.—P. J. McAlpine's Charles Rye 1, SE SW Section 22-15s-17w, Monroe County, northeast Mississippi, located 1320 feet south of a test that showed three million feet of gas at 2709 feet several years ago, encountered a small gas show at 2727 feet in sand last week but is arranging to core ahead.

In George County, southeastern Mississippi, Pelican Oil & Gasoline Company, Inc., is drilling at 1900 feet with sand giving trouble, in Luce Packing Company 1, Section 25-1s-6w.

A wildcat in Hinds County, Lionel Petroleum Corporation's J. L. Gaddis, Jr., 1, Section 7-7n-3w, is drilling at 1405 feet; elevation is 172 feet. In Lamar County Stauffer & Kouri's Bond 1, SW SE Section 18-2n-14w, has a fishing job at total depth of 3026 feet. After landing six-inch casing the plug refused to pass the 1900-foot level and was set back about 500 feet and later the casing parted leaving approximately 1400 feet of it in the hole.

In Stone County, Gulf Refining Company and S. P. Borden's Dantzler Lumber Company 2, Section 12-4s-11w, is drilling below 2990 feet.

In Sunflower County, Mississippi Oil & Gas Exploration Company's Adair 1, SE SE Section 36-21n-3w, was in Wilcox at 2300 feet and later was coring just below that level for the Mideay contact expected to be picked up around 2320 feet.

In Wilkinson County Foster Creek Oil Corporation's Foster Creek Lumber Company 1, located 930 feet west and 225 feet north SEc NE Section 14-2n-2w, is drilling gumbo at 2203 feet, elevation is 320 feet.

In the Jackson gas field, Hinds County side, Ferguson, Fuller et al are arranging to drill plug and test W. B. Montgomery 1, NE NW NW Section 26-6n-1w, at 2479 feet; elevation is 311 feet. This is the only test near the pay in the Jackson field.

Gulf Spuds Test on Large South Alabama Tract

Mobile, Ala.—Gulf Refining Company has spudded a test on a new location in Escambia County, south Alabama, on a 40,000-acre block taken from the W. M. Carney Mill Company at Atmore, Alabama, on an exploration contract by Gordon S. Bowdish. The test is H. D. Ewing et al 1, located 350 feet south and 300 feet east SWc Section 9-1n-5e. The rig used was moved on location from Gulf Refining Company's recent test in George County, southeast Mississippi, and is rumored the test in Escambia County will be a shallow one. The test is eight miles northwest of Atmore. The block lies in Escambia and Baldwin Counties.

Just across the line in Escambia County, Florida, location was made the

week before and derrick is now up for Escambia Oil Company's State Line Lumber Company 1, NE NW SW Section 24-1n-10e.

J. C. Prine, who abandoned M. & O. Railroad 1, Section 33-2n-4w, Mobile County, at the 3800-foot level several months ago, has skidded over 10 feet and spudded M. & O. 2, SE NE SW of that section and is shut down in the new hole at 2200 feet.

In Walton County, Florida, Oil City Corporation's Walton Land & Timber 1, SE NE NW Section 12-1n-19w, is shut down at 5375 feet, considering a plan to whip stock out for a new hole.

Status of other Alabama and northwest Florida tests last week was unchanged.

Baldwin County, Alabama, Test to Start by May 1

Mobile, Ala.—Danciger Oil & Refining Company under terms of a drilling obligation is expected to start a test by May 1, on a block of several thousand acres it has in lower Baldwin County, Alabama. The main part of the block is on the peninsula on which is located old Fort Morgan on which the government drilled a water well in 1909 that went to the 1500-foot level and showed oil. The block is in township 9 south, ranges 1 and 2 east. Dauphin Island is also understood to be in the block and land subject to tide overflow on both sides of the peninsula and on both sides of Mobile Bay.

Hobbs Field Allowable Cut to 28,894 Barrels

Hobbs, New Mexico.—Allowable production on the Hobbs field was reduced from 30,475 to 28,894 barrels daily beginning April 1 as result of Atlantic Petroleum Purchasing Corporation, crude buying subsidiary of Atlantic Refining Company, Philadelphia, having lowered its nominations from 6000 to 4500 barrels daily. The other four purchasers of oil in the field nominated their usual takings, which follow: Shell Pipe Line Corporation 13,500 barrels; Humble Oil & Refining Company 9630 barrels; The Texas Company 1213 barrels; and Walker Oil Corporation 51 barrels.

The scheduled change in the method of apportioning proration allowables on April 1 did not materialize because of several of the large lease owners having failed to sign the agreement that was adopted with a few dissenting votes March 21. The revised plan would distribute 60 per cent of the production allowable among 40-acre units on a basis of average potential, and the remainder on a basis of acreage, instead of 75 per cent for average potential and 25 per cent for acreage.

All hopes of converting the two outpost tests on the north end of the Hobbs field into commercial producers faded last week when Humble Oil & Refining Company's Hardin 1, SWc NW¼ Section 18-18s-38e, re-drilled and deepened to 4359 feet without encountering oil or gas. It swabbed sulphur water at the latter depth. Completion was first attempted at 4248 feet early in March, resulting in water, and the well failed to attain a shut off when plugged back to 4200 feet. Amerada Petroleum Corporation's Hardin 3, a south offset, is also a water well at 4160 feet, but may be deepened, or worked over, before plugging orders are issued.

Completions for the week follow:

Company, Well and Location	Init. Prod. Bbls.	Depth
Hobbs Field—		
Humble O&R Co., B. Hardin 1	*	4359
Stanolind O&G Co., Thorpe 26, Sec. 10-19-38	130	4185

*Failures. †Junked. ¶Million cu. ft. gas.

Few Wildcat Wells Active In New Mexico

Santa Fe, N. M.—Landowners Oil Company has got under way in its De-Baca County wildcat State 1, NE Section 16-1s-27e, and is drilling below 5860 feet. It is one of the few wildcat wells active in New Mexico. Most of them are held up by a lack of adequate financing.

In San Miguel County, Cabra Springs Oil & Gas Company's No. 1, NE NE Section 22-12n-22e, has been shut down until April 10 at 460 feet. The tools have been sidetracked and the 15-inch is to be pulled in order to straighten the last 10 feet of hole. Structure is called Pinon Mesa.

On the Pajarito Grant in Bernalillo County, Norrins Realty Company's No. 1, NE Section 22-9n-2e, is bottomed at 3640 feet, changing over to rotary. Location is made on NW NW Section 19-11n-4e, for Galegas Grant 1.

In Chaves County, Warman Oil Trust is last reported to be bottomed around 800 feet. The well is Weldon & Hoar 1, SE Section 9-14s-25e.

Anton Chico Development Company's well in Guadalupe County, SW Section 20-9n-17e, has set 10-inch casing at 1530 feet for a water shutoff. New Mexico Producing & Refining Company's McMullen 1, Section 24-5n-16e, is ready to resume at 4507 feet.

Rig is up for a test to be drilled in Rio Arriba County, Section 26-3s-1e, by Pan States Oil Company.

Grove et al have material on the ground for No. 1, Section 3-29n-11w. Fred Barrett interests are drilling below 500 feet in Hart 1, Section 11-29-12, on the Fulcher Basin structure. Both of these tests are on structure in San Juan County.

In Valencia County, Western Natural Resources Corporation is underreaming to set the 8¼-inch casing at 4240 feet. Location is on NE Section 5-6n-1e.

Work Started of Large Cut Bank Drilling Campaign

Cut Bank, Mont.—One near completion and one new location were announced last week in the Cut Bank field. Roy Tarrant's Haglund 1, SW SW NW Section 13-34-6w, was shot and cleaned out. From 2864 feet the well is last reported to be swabbing 30 to 40 barrels per day; it will make an average producer for the field. Alberta-Pacific Consolidated started work on Matson 2, SE NE SW Section 14-34-6w. This is the first of a large program which the company is preparing to drill in the field this summer.

Roy Tarrant's McLellan 1, SE SW Section 7-34-6w, which was completed as a gasser recently, has been hooked into the Drumheller gas line which supplies the town of Cut Bank. The new supply has been much needed inasmuch as the town was drawing upon only one well.

North and west of the proved part of the field three "wildcats" are drilling—W. M. Fulton's Haggerty 1, NE NE NE Section 16-34-6w, which is below 1250 feet; Santa Rita Oil & Gas Company's Blackfeet 1, SW NE Section 15-36-6w, which is below 2470 feet, and P. T. Sweeney's Lee Jacobson 1, NW NW Section 23-37-5w, which is drilling around 450 feet.

Maverick Springs Crude Demand to Open Field

Casper, Wyo.—It is more or less reliably reported here that a market for 2000 barrels of black oil from the Maverick Springs field in Fremont County, Wyoming, has recently been developed in Nebraska and surrounding territory. This has been of interest in Wyoming in the light of the recent discussion of the probability of a railroad to Pavillion, and a pipe line from the Maverick Springs field to that point. It is understood, however, that the major oil companies which have holdings in the field, will strenuously fight the requirement recently made by the Department of the Interior that the field be put on production. They contend that there is no demand for this oil at present and that it would be unwise therefore to open up the field. The Indians, however, on whose land the field is situated, insist upon their right to an income from the oil, stating that other fields are supplying the demand and keeping the tribesmen from their rightful inheritance.

Alkali Butte Well Testing Sundance and Morrison

Riverton, Wyo.—The Texas Company has plugged back from 5460 feet to 4875 feet at its deep test in the Alkali Butte field, in Fremont County, and is ready to make a test of gas showings in the top of the Sundance and in the Morrison formations. The well is State-Ridgway 2, SW Section 36-34n-96w.

Small Refining Plants Cause Regulars Concern

Casper, Wyo.—A situation which is said to be giving the major refining and marketing companies considerable concern at present is that of the small independent skimming plant and filling station. These minor operations are springing up in increasing numbers in both Montana and Wyoming this year, and a tabulation furnished by state officials in Wyoming this month places the number of plants either now in operation or under construction as around 30. All of them are tributary to oil fields or are operating on crude produced in the Osage field. Recently the problem has become so grave in northern Montana that purchasing agencies for the major companies have notified producers to stop selling crude oil to individuals, or lose their market with the purchasing agencies.

Warm Springs Operations To Resume in Few Weeks

Thermopolis, Wyo.—Within the next few weeks the C. B. Shafer interests of Chicago are expected to resume operations on the Warm Springs structure near Thermopolis. There are 27 producing wells shut down in this field. Production is from the Tensleep and is heavy black oil.

Montana Wildcat Work Centered Around Cut Bank

Helena, Mont.—Wildcat wells now operating in Montana are confined for the most part to the Cut Bank field district where three tests are under way with the object in view of discovering the limits of the producing area in this new district. All operations are in Glacier County.

West of the field there are two wells drilling on the Blackfeet Indian reservation. Santa Rita Oil & Gas Company's Blackfeet 1, SW NE Section 1-15-6w, is drilling below 2650 feet, and the W. M. Fulton's Haggerty 1, NE Section 16-34n-6w, is drilling below 1650 feet.

Considerably to the north of the proved area of the field the joint test of the P. T. Sweeney interests and Santa Rita Oil & Gas Company's Jacobson 1, NW NW Section 23-37-5w, is drilling below 700 feet. Production here would mean a six-mile extension to the field.

In Yellowstone County, Rice-Fulton Development Company's wildcat well on Devil's Hole structure, W½ SE Section 20-2n-23e, is drilling around 2500 feet with the first Frontiers expected around 2600 feet, the Dakota around 3500 feet, and the Lakota around 3700 feet.

Having for its purpose the development of the Armells structure, 20 miles north of Lewistown, for a supply of natural gas, the Rom-Ed Natural Gas Company has recently been incorporated in Montana. There is one small gas well already completed on this structure, but it is not commercial.

Contract Four Wells in Baxter Basin-Hiawatha

Rock Springs, Wyo.—Contract has been let for four wells to be drilled in the Baxter Basin-Hiawatha dome district in southwestern Wyoming by Ohio Oil Company's subsidiary, Mountain Fuel Supply Company, to the Rocky Mountain Drilling Company. Two additional wells will be drilled, it is understood, but locations for these have not been spotted. One well in the program is in the North Baxter Basin field and three are in South Baxter Basin. One of the Hiawatha dome wells is to be a deep test for oil, it is reported.

Rotary Test on Iles Dome To Start Before September

Craig, Colo.—The first rotary test to be drilled on Iles Dome in Moffat County, northwestern Colorado, will be that of The Texas Company on land belonging to Iles Investment Company. Contract calls for a test to be spudded by September 1, 1933, and to be drilled to 4200 feet unless production is found at a shallower depth. Iles Dome has been proved for oil production for several years. It produces from two sands—the Sundance and the Morrison.

Dry Creek Test Drilling Below 4915 Feet

Red Lodge, Mont.—Ohio Oil Company's Souders 9, in the Dry Creek field, Carbon County, southern Montana, is drilling below 4915 feet. This is the only active operation in the field and is the last of the company's program for this year. Location is on Section 2-7s-21e.

Alberta Operations Report Progress; Weather Good

Calgary, Alta.—Report from three wildcat tests on the Alberta plains last week showed all to have made good progress in the recently improved weather. Hudson's Bay Oil & Gas Company has made a final completion of its test on the Keho Lake structure, LSD 2, Section 17-11-22, W4, at 3770 feet. The well is making about six barrels per day on the pump. Future plans of the company for development of this structure are not announced.

On the Twin River structure the test of Nordon Corporation and the Roney interests is drilling below 1850 feet. Location is on LSD 11, Section 2-2-20, W4.

Hunter Valley Oil Company is rigging up for No. 1 on Township 31, Range 10, W5, on the Hunter Valley structure. This test should be spudded next week.

Demand for Osage Crude Depletes Field Stocks

Osage, Wyo.—Recent demand for crude produced in the Osage field in eastern Wyoming has been so great that all storage oil is about exhausted and it will be necessary for all wells in the field to be put on full production and for new wells to be drilled this summer. At this time there is one well actually drilling in the field and one rigging up.

Location Made for Deep Test on Hiawatha Dome

Denver, Colo.—Location on Section 22-12-100w, on the Hiawatha dome, in Moffat County, for its deep test which is to be carried to 8000 feet if necessary has been spotted by Mountain Fuel Supply Company. Hiawatha dome has been proved for gas production in the shallower sands, but no test has ever been carried to the deeper horizons and for this reason the operation promises to be one of the most interesting to be conducted in Colorado this season. The new location is a half-mile northeast of the discovery gasser, drilled by Somir Petroleum Company in 1926, which was good for 58,000,000 feet from the Wasatch formation.

Mid-Colorado Petroleum Company is asking for bids on 26 miles of four-inch gas line to be laid from its Fish Creek structure wildcat well, Omholt 1, SE Section 29-4n-87, in the Williams Park district in Routt County, to the town of Steamboat Springs. The company also considers laying a line to the town of Hayden, it is said. The well is standing bottomed at 2200 feet and has an aggregate daily production from two sands of around 5,000,000 cubic feet of gas. If the company decides to lay

these gas lines it is probable that the plan of drilling the well deeper will be given up. Possibly a second test will be drilled to the lower sands with the idea of developing oil production.

Continental Oil Company is drilling around 5600 feet in Anthes 1, NE NE Section 24-8n-59w, on the Buckingham-New Raymer structure in Weld County.

South Park Oil & Gas Company is taking material and equipment for the old Mutual well in Fremont County and moving it to Esche 1, NW Section 5-9s-76w, in Park County, on the Como structure. This well was spudded in 1930 and drilled to 2465 feet. It has had several shows of oil and gas, and now has a hole full of water from the Dakota or the Muddy. A fishing job confronts the crew before deeper drilling may get under way. This structure is on the southermost of three large mountain parks, north, middle and south.

Pilot Butte Test Cemented On Oil Sand at 821 Feet

Riverton, Wyo.—Kinney-Coastal Oil Company's test in the Pilot Butte field, in Fremont County, Wyoming, is standing with the 8¼-inch casing cemented on top of a sand showing some oil with total depth 821 feet. The well is Enos 3, SE SE NW Section 22-3n-1w.

First of Series of Core Tests Started on Midway

Casper, Wyo.—Mutual Oil Syndicate is drilling its first core test on the Midway dome 12 miles north of here. This will be the first of a series of such tests to be drilled for the purpose of developing more knowledge concerning the subsurface geology of Midway dome. The machine being used is one which was specially designed by S. H. Keoughan, president of the company, and fabricated for him in the local shops of the Great Northern Tool & Supply Company. The location is 1000 feet southwest of the discovery well drilled some years ago by Midwest Refining Company.

Plan Test of Gas Short Distance from Fort Morgan

Fort Morgan, Colo.—The city council of this town has been asked to delay action on the grant of a franchise to supply natural gas to the municipality by A. J. Hardendorf and associates of Denver who wish to test a structure five miles southeast of here. H. C. Bretschneider, formerly a vice president of Midway Refining Company, is associated with Hardendorf in the venture. Drilling, it is understood, is to be started imediately.

Improved Weather Opens Wyoming Wildcat Work

Casper, Wyo.—One new wildcat well started building rig in Wyoming last week and another proved a failure and was abandoned. One well which was started last fall resumed operations. Improved weather conditions in the state will permit resumption of drilling operations which have been necessarily inactive during the winter.

Reader Oil Company let contract for a cable tool test to M. E. Tolles for Union Pacific 1, SW SW Section 19-20n-83w, on the Overland, or Pass Creek, structure in Carbon County. The crew is now building rig. Frontier sands are expected around 2300 feet and the Dakota around 3400 feet.

T. R. Oberman is abandoning his test on the Diamond ranch structure, in Platte County, NW SE Section 30-21n-68w, in granite at 510 feet. The only showing of oil reported was rainbow color in reworked granite at 470 feet.

Work is being resumed by Leo B. Murphy and associates on the test on Platte River dome structure, west of Casper, in Natrona County. String of 8¼-inch casing is being run to shut off the water coming from the Dakota. Hole is bottomed at 840 feet. Location of this operation is on SE NW Section 29-33-80.

A meeting was scheduled for April 7 in New York City of the Steele Creek Oil Corporation. Principal discussion at the meeting was to be centered about the company's future policy for the wildcat test it started in 1928 on the Steel Creek structure, No. 2 on SW SE NW Section 17-46-82, in Jackson County, south of the Billy Creek gas field. The well was drilled to 3650 feet after having topped the Dakota at 3630 feet and found water.

Rig is up and ready to spud in Ohio Oil Company's A. J. Hazlett 1, SW Section 34-23-79, on the Allen Lake structure, a semi-proved wildcat. May 1 is the date now set for spudding this well. If it is proved for gas production it will be used as an auxiliary supply for the Laramie gas system.

Wildcat test of S. Marvin James & Company on the Riverside ranch, Hindry 1, SW SW Section 10-13n-76w, is bottomed at 510 feet and waiting for cement to set.

Area North of Muskegon Will Be Tested for Oil

Mt. Pleasant, Mich.—Locations are being cleared for two wildcat tests in Muskegon County north of the old producing field. Five test wells drilled in Dalton Township are reported to show structure running to the northwest of the old field.

Old Dutch Oil & Gas Company, headed by John Borden, will drill a Dundee test on the W. C. Cotes 1, Blue Lake Township, Section 29, SE SE NW. The Reed Oil Company will drill a test on the Paulson & Barlow 2, W½ SE¼ Section 8, Muskegon township.

Locations are being cleared and equipment hauled in for both of the tests, expected to start by April 15.

Muskegon Oil Corporation's Trumbull 1, Dalton township, Section 11, was last reported drilling below 2400 feet and in the Dundee lime without production.

James M. Taggart et al's Barton 1, Mecosta County, Austin township, Section 11, is setting 6-inch casing through the Marshall sand. A Braden-head is to be set to save a 4,000,000 foot a day gas flow coming from the Michigan sand at 1481-90 feet, above the Marshall, while the well is deepened into the Dundee lime for an oil test.

Operations have been suspended on Alvin Webber's Bohlinger 1, Ogemaw County, Section 26, West Branch township, at 1400 feet and the test may be abandoned because of striking an unexpected regional dip in the formation.

Pure Oil Company is drilling below 500 feet on Mills Estate 1, Section 36, Mills township, Ogemaw County.

In Wexford County Oil Properties' McNitt Estate 1, Section 10, Harning township, is shut down in the Dundee at 3800 feet with a hole of water. It may be deepened to 4100 feet.

Ira Scheifley's Fur Farm Syndicate 1, Clare County, Section 21, Summerfield township, is drilling at 3200 feet.

In Midland County L. G. Thompson's Ryal 1, Section 3, Mt. Haley township, is drilling below 2900 feet; Columbia Oil & Gas Company is fishing at 1390 feet on the Travis 1, Greendale township, Section 32; Pure Oil Company is drilling at 1000 feet on the Clark Heirs 1, Section 2, Jasper township; drilling at 650 feet on the State-Porter 1, Section 15, Porter township, and Sun Oil Company is drilling at 450 feet on the Miller 1, Section 16, Porter township.

Porter Township Center Of Michigan Activity

Mt. Pleasant, Mich.—A big drilling play in Porter township, Midland County, where 17 new tests have been started in the past four weeks, features Michigan activity.

Two of the new tests will be completed within another 10 days. Pure Oil Company's Mates 1, Section 22, SW NW SE, is drilling below 3150 feet and Gordon & Teater's Baxter 1, Section 22, SE SW NW, is drilling at 3000 feet. The discovery well, Michigan Pacific & Treater's Otway 2, SE NE SW, Section 22, was

completed at 3445 feet for 3200 barrels initial from the Dundee lime.

Sixteen tests were completed in Michigan during the past month. Ten were completed for producing wells with a combined initial flow of 1855 barrels, two were gas wells with a combined flow of 5¾ million cubic feet and four were dry. In February 13 tests were completed, six dry and seven producers with a combined initial of 3655 barrels.

There were 24 new starts made in the state in March as compared to 23 the previous month.

Completions follow:

Company, Well and Location	Init. Prod. Bbls.	Depth
Midland County—		
Pure Oil Co., McCann 2, Greendale Twp., sw se ne, Sec. 7	300	3563
Harnick A3, Greendale Twp., nw ne ne, Sec. 14	*	3803

*Failures. †Junked. ¶Million cu. ft. gas.

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Only Five New Wells In Eastern States

Cleveland, Ohio.—Twenty-four completions in fields of the Eastern States during the week resulted in five oil wells, 14 gas wells, and five failures, with initial production of the oil wells aggregating 119 barrels.

A detailed list of completions by counties and states follows:

Pennsylvania

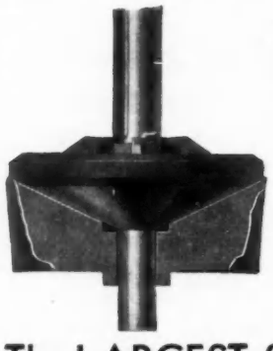
Company, Well and Location	Init. Prod. Bbls.	Depth
Washington County—		
Baldwin & Gaskell, Clark 1	*	1000
Carnegie Natural Gas Co., Morton 1	5	3000
West Virginia		
Calhoun County—		
Homer Scott, Board of Education 1	¶	1795
Norris & Cane, Miller 1	5	....
Jackson County—		
H. H. Sheppard & Co., Burdette 1	*	1653
Kanawha County—		
Grosscup & Copenhaver 3	¶	4812
Roane County—		
Tawney Oil & Gas Co., Tawney 1	¶	2136
New York		
Tioga County—		
Mellon-Pollock Oil Co., Van Ziel 2	¶	3877
Central Ohio		
Athens County—		
C. O. Young, Young 3	1	1102
Coshocton County—		
Hulse-Kuntz, Inc., Dawson 1	66	3185
Fairfield County—		
City Natural Gas Works, Bauman 3	¶	517
Hocking County—		
City Natural Gas Works, Orendorf 2	¶	2353
Ohio Fuel Gas Co., Reichley 1	¶	2509
Licking County		
Wehrle Gas Co., Iches 2	*	2537
Medina County—		
Kolb & McGrath, Severcool 2	*	....
Muskingum County—		
Wittmer Oil & Gas Co., Miller 1	38	4004
Perry County—		
Clyde Foraker & Co., McCray 1	¶	3600
Stark County—		
Ohio Fuel Gas Co., Gill 1	¶	4514
Indiana		
Pike County—		
Claude E. Noble & Co., H. Smith 1	¶	1040
A. E. Davies & Co., J. Smith 1	¶	1135
Charles C. Taliaferro, Jr., Insman 1	¶	1145
Northwestern Ohio		
Seneca County—		
W. I. Gettman & Co., Crum 1	¶	....
Green & Co., McElhaney 1	¶	....
Illinois		
Crawford County—		
Warner Bros., Jessup 1	*	1635

Company, Well and Location	Bbls.	Depth

Permits Show Increase in Michigan Field Work

Mt. Pleasant, Mich.—Five permits to drill were issued in Michigan this week, bringing the state's total for the year up to 68, an increase of 37 over the same period in 1932.

Old Dutch Oil & Gas Company's Cotes 1, Muskegon County, Blue Lake township, Section 29, SE SE NW; Reed Oil Company's Paulson and Barlow 2, Muskegon County, Muskegon Township, Section 8, W½ SE¼; Talbot Oil Company's State C4, Midland County, Greendale Township, Section 10, SE SE SE; Strange Oil & Gas Company's Walley 1, Midland County, Porter Township, Section 16, S½ SE¼; Gordon Oil Company's Muscott 1, Midland County, Porter Township, Section 17, SE NW NE.



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1. Sucker Rod Guide

KORNER ENGINEERING COMPANY

Korner Engineering Company, 2026 Santa Fe Avenue, Los Angeles, California, announces production of the Walker sucker rod guide, designed to cut down bucking and slapping of rods.

A feature of the design is that fluid passes up through the center of the guide instead of around it, thereby reducing the abrasive action on the tubing. There is a three-sixteenths-inch tolerance between the outside diameter of the guide and the inside diameter of tubing for which it is made.

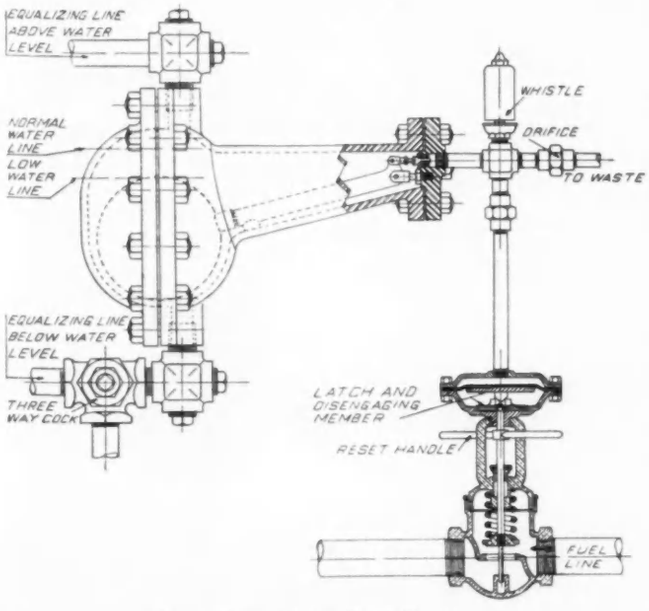
The guides are made of a special alloy cast iron base which will not peel or sliver, according to the manufacturer. They are made in 2½ and three-inch sizes for rods up to and including seven-eighths-inch diameter.

2. Protective Unit for Boilers

DAVIS REGULATOR COMPANY

Davis Regulator Company, Chicago, has recently developed an automatic low water fuel cutoff designed to meet insurance standards for gas fired field boilers such as are used in drilling oil and gas wells.

The unit consists of a cast steel float chamber, pilot valve, fuel shutoff valve, and a whistle. The float chamber is connected to the steam and water spaces of the boiler. The diaphragm-operated fuel valve may be placed at any convenient point as it is closed by admission of steam pressure to the top of the diaphragm. The unit is designed to handle a maximum working steam pressure of 350 pounds.



Davis Low Water Fuel Cut Out

When the water level in the boiler drops below a predetermined point the float will be carried down to a point where it opens the pilot valve. Steam flowing through the pilot valve builds up pressure over the diaphragm of the cutoff valve and forces it down. The downward movement of the diaphragm trips a latch and causes the main valve to close immediately. After closing, the main valve cannot be opened again until the latch is reset by hand.

A whistle is installed between the float chamber and the cutout valve; when the pilot valve opens the whistle blows, warning attendants. A small vent orifice is provided in the line between the pilot valve and the diaphragm chamber that prevents any possible leakage from building up enough pressure to trip the fuel valve. The vent is kept very small so that it does not interfere with the regular operation of the unit.

Facilities for testing the unit at any time are provided by a three-way cock located in the water leg of the float chamber. Movement of this cock drains the water out of the float chamber and allows the pilot valve to open, thereby starting the cycle of operation. Steam blowing through the cock after the water is drained out makes it impossible not to notice the position of the handle. This insures that the cock will be turned back to its normal operating position. As a further safeguard, the main fuel valve cannot be reopened as long as steam flows through the float chamber.

3. Corrugated Steel Decks

THE PARKERSBURG RIG & REEL COMPANY

The Parkersburg Rig & Reel Company, Parkersburg, West Virginia, has perfected a corrugated deck for bolted steel tanks, which features increased strength, perfect fitting of the seams, ease of erection, simplicity, and elimination of rafters, flanges and channels, according to the manufacturer.

This deck has deep, radial corrugations pressed into the steel sheets, the shape, number and location of these corrugations so designed as to make it self-supporting and of equal

— — — — — — *MAIL COUPON* — — — — — —

THE OIL WEEKLY,
Houston, Texas, U. S. A.

Please see that I am supplied, without obligation, additional information on New Equipment Items Nos..... described in the April 10, 1933, issue of THE OIL WEEKLY.

Name.....

Company.....

Address.....

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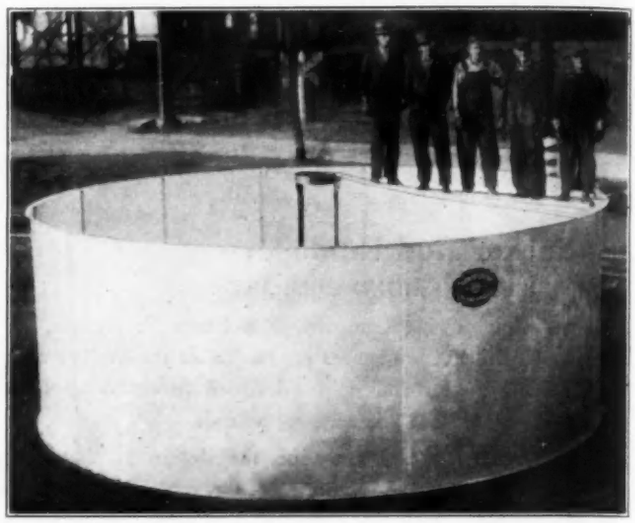


Parkersburg Deck

strength over its entire area. This construction is claimed to withstand increased pressure or vacuum without permanent deflection, reducing the possibility of bulging or pulling in.

Channels, pressed into the radial seams, result in perfectly matched joints, producing a tighter tank. They also prevent bolts from turning when nuts are tightened or loosened. A flat seat is provided for the dome by pressing an offset into the inner end of each sheet to compensate for the thickness of metal and gasket. The periphery is formed so as to lie flat on the flange of staves, thereby eliminating fitting in the field and reducing caulking.

In its erection, no rafters are required and the absence of inside projections further add to the safety of this deck as the number of surfaces in contact with corrosive gases are reduced to the minimum and collapse from corrosion eliminated.

4. Sound Isolating Base

GENERAL ELECTRIC COMPANY

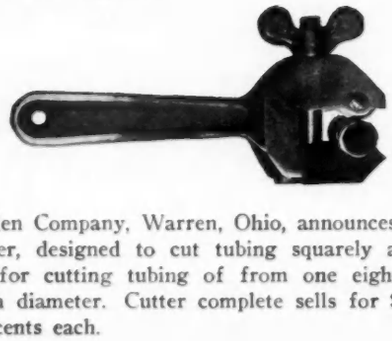
General Electric Company, Schenectady, New York, announces a new motor base with sound-isolating features.

Floating members are suspended on specially developed isolating material. The motor is mounted as on a standard sliding base, and belt tension and motor alignment are maintained in the ordinary manner.

Adjusting screw moves motor for belt adjustment. Bases are installed as a unit. The stiffness of the sound-isolating material is sufficient to maintain motor alignment for any reasonable belt tension. Guide washers in machined grooves are used with the belt-adjusting feature to maintain motor alignment.

5. Tubing Cutter

THE BORDEN COMPANY



The Borden Company, Warren, Ohio, announces Model 100 tubing cutter, designed to cut tubing squarely and without burrs and for cutting tubing of from one eighth to three quarter inch diameter. Cutter complete sells for $2.00; extra wheels, 20 cents each.

Squeaks *from the* BULL WHEEL

Rum-Runner: "Them's the chief's orders. Slow your truck down to eight miles an hour and let the stuff age!"

A man had just bought a car. He took his wife on a few expeditions, during which she did not hesitate to criticise her husband's efforts at driving.

"Halloa, old man," said the next-door neighbor one evening, "I see you've got a little two-seater. What do you get out of her?"

"About forty thousand words to the gallon," answered the other sadly.

Magician (sawing women in half): "Now ladies and gentlemen, after the young lady is severed, her brains will be given to a medical college and the rest will be thrown to the dogs."

Gallery Gang: "Woof, woof, bow wow!"

Uncle and niece stood watching the young people dancing about them.

"I bet you never saw any dancing like this back in the nineties, eh Uncle?"

"Once—but the place was raided."

Bachelor Girl—What do you miss most now that you're married and settled down?

Wife—My husband.

A school teacher instructing her class in composition said: "Now children, don't attempt any flights of fancy. Don't try to imitate the things you have heard, but just be yourselves and write what is really in you."

As a result of this advice, one youngster turned in the following composition:

"I ain't goin' to attempt no flite of fancy; I'm just goin' to write what's in me, and I got a hart, a liver, two lungs, and some other things like that; then I got a stummick, an' it's got in it a pickle, a piece of pie, two sticks of peppermint candy and my dinner."

The following correction appeared in a small town paper:

"Our paper carried the notice last week that Mr. John Doe is a defective in the police force. This was a typographical error. Mr. Doe is really a detective in the police farce!"

Proud Father (showing triplets to a visitor): "What do you think of them?"

Visitor (pointing to one in middle): "I'd keep that one."

Billy (at dinner): "Papa, are caterpillars good to eat?"

Papa: "Haven't I taught you better than to mention such things at the table?"

Mama (after a pause): "Why, Billy, why did you ask that question?"

Billy: "I just saw one on Papa's lettuce, but it's gone now!"

It is said that in Wall Street today they estimate a man's financial sagacity according to the following scale.

"Any man whose assets inventory 25 per cent of what they were three years ago has shown extraordinary acumen; 35 per cent of three years ago, a worker of financial miracles; 50 per cent a darn liar."

Some gulls were following a ferry boat.

Irishman: "Nice flock of pigeons."

A tourist insisted: "Those are gulls."

"Well," said the Irishman, "gulls or boys, they're a fine flock of pigeons."

here's a NEW WAY–a SAFE WAY

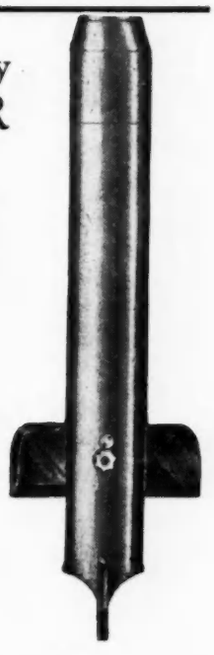
to straighten a CROOKED HOLE

start a wide shoulder

With the BAKER Rotary Hydraulic WALL SCRAPER

FIRST . . . start a wide shoulder with the BAKER Rotary Hydraulic Expansion Wall Scraper at the desired point . . . then follow with the right kind of bit to prevent going back into the old hole.

EXAMPLE . . . A 12¼ inch hole was off 4½ degrees at bottom. Backing up 180 feet and reaming down 120 feet with 15 inch blades, following with 17 and 19 inch blades, the operator secured a shoulder that permitted getting away from the old hole. ***(Actual report quoted in "BAKER BROADCAST No. 14").***



BAKER OIL TOOLS, INC.

HUNTINGTON PARK, CALIFORNIA

COALINGA TAFT HOUSTON OKLAHOMA CITY TULSA NEW YORK

NEWS *from the Industry's* EQUIPMENT MAKERS

Truck of Shaffer Tool Works which made run of 60 hours, from factory at Brea, California, to deliver a blowout preventer to Republic Production Company, at Conroe. At left is Carl Vogt, Mid-Continent sales manager, at right, Robert Miller, Texas representative for Shaffer.

Welding Process

Metal & Thermit Corporation, 120 Broadway, New York, announces a new welding process known as Murex Straight Gap welding, particularly suited to the joining of heavy plates.

According to the corporation, the new process does away with all need for "veeing" or grooving of plate edges, and the plates may be used just as they come from the mill.

The electrode used in the process is Murex Universal, for use on mild steel in flat, vertical, or overhead work. Smooth, clean deposits of high strength and ductility are claimed for the electrode.

Tractor Track

Allis-Chalmers Manufacturing Company, Milwaukee, Wisconsin, announces availability of an illustrated folder describing a 15-ton drop forged steel tracks for all makes of track wagons.

Insert Pump

Bradford Motor Works, Bradford, Pennsylvania, announces availability of an illustrated bulletin describing a junior insert pump with a small capacity working barrel with capacities ranging from 28 to 210 barrels per day.

E. H. Edwards Company, San Francisco, California, announces that the board of directors, March 28, elected the following officers; chairman of the board, G. A. Urquhart; president, George Wagner; vice president, H. A. Wood; secretary-treasurer, A. M. Dodge; assistant secretary, W. W. Davis. The board appointed H. A. Wood as manager with supervision of sales and manufacturing.

Variable Reducer

Smith Power Transmission Company, Penton Building, Cleveland, Ohio, announces availability of an illustrated bulletin describing the Johnson variable reducer, a single unit mechanical device incorporating the over-running clutch principle for speed reduction of a motor.

Tubular Products

National Tube Company, Pittsburgh, Pennsylvania, will soon issue a bulletin telling of the uses of "Duroline" pipe, a cement-lined product, in the oil industry, particular with reference to application in salt water disposal systems.

STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC., REQUIRED BY THE ACT OF CONGRESS OF AUGUST 24, 1912.

Of The Oil Weekly, published weekly at Houston, Texas, for April 1, 1933.

State of Texas, County of Harris: ss.

Before me, a Notary Public in and for the State and county aforesaid, personally appeared A. L. Burns, who, having been duly sworn according to law, deposes and says that he is the Business Manager of The Oil Weekly and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management (and if a daily paper, the circulation), etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, embodied in section 411, Postal Laws and Regulations, printed on the reverse of this form, to wit:

1. That the names and addresses of the publisher, editor, managing editor, and business managers are:

Publisher: R. L. Dudley, 3238 Huntington Drive, Houston, Texas.

Editor: S. W. Robinson, 5002 Scotland, Houston, Texas.

Managing Editor: J. Kent Ridley, 605 Sul Ross, Houston, Texas.

Business Manager: A. L. Burns, 4311 San Jacinto, Houston, Texas.

2. That the owner is: (If owned by a corporation, its name and address must be stated and also immediately thereunder the names and addresses of stockholders owning or holding one per cent or more of total amount of stock. If not owned by a corporation, the names and addresses of the individual owners must be given. If owned by a firm, company, or other unincorporated concern, its name and address, as well as those of each individual member, must be given.)

The Gulf Publishing Company, Houston, Texas; James Anderson, Houston, Texas; R. L. Blaffer, Houston, Texas; Mrs. Sarah Campbell Blaffer, Houston, Texas; A. L. Burns, Houston, Texas; J. F. Carter, Jr., Tulsa, Okla.; Dr. N. L. Dudley, Goose Creek, Texas; R. L. Dudley, Houston, Texas; W. S. Farish, Houston, Texas; Wm. V. Gross, Houston, Texas; Howard R. Hughes, Houston, Texas; Chas. H. Lane, Houston, Texas; Wallace E. Pratt, Houston, Texas; J. Kent Ridley, Houston, Texas; S. W. Robinson, Houston, Texas; Mrs. Maude G. Sterling, Houston, Texas; R. P. Swinsky, New York, N. Y.; O. R. Waller, Chicago, Ill.

3. That the known bondholders, mortgagees, and other security holders owning or holding 1 per cent or more of total amount of bonds, mortgages, or other securities are: (If there are none, so state.) None.

4. That the two paragraphs next above, giving the names of the owners, stockholders, and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company but also, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association, or corporation has any interest direct or indirect in the said stock, bonds, or other securities than as so stated by him.

A. L. BURNS,
Business Manager.

Sworn to and subscribed before me this 31st day of March, 1933.

(Seal)

J. KENT RIDLEY.
(My commission expires June 1, 1933.)

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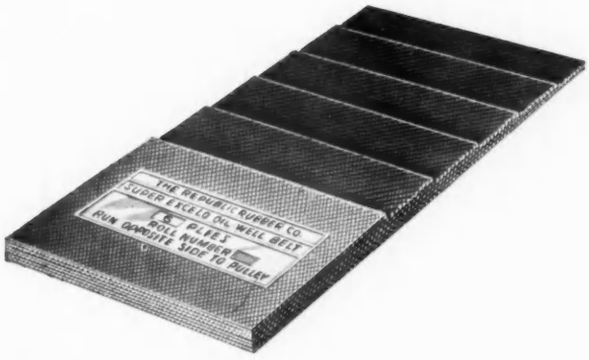

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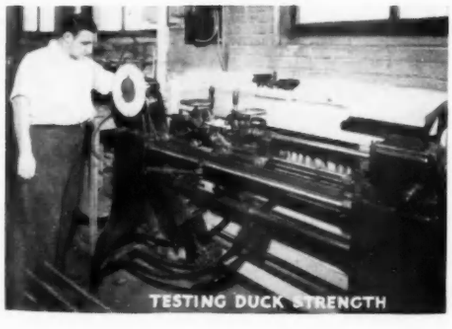
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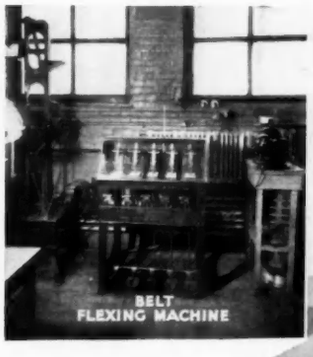
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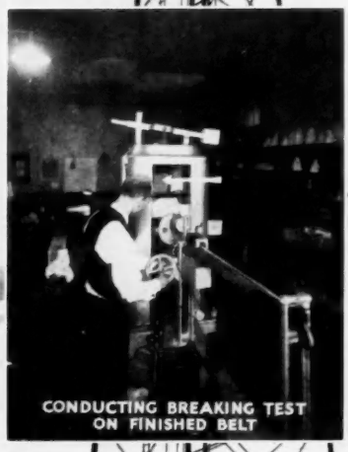
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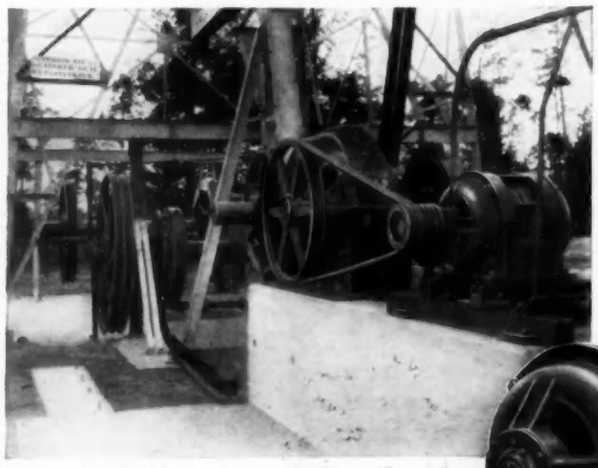

A G-E triple-rated Y-Delta induction motor driving an oil-well pumping rig in an East Texas field

G-E gear-motor operating an oil-well pumping rig in a Gulf Coast oil field, Texas

1. TRIPLE-RATED Y-DELTA MOTORS

Oil men find that the most economical method of well pumping, under present regulations, is to use a motor of low horsepower rating in order to keep electric power and costs at the minimum. That's why they select G-E triple-rated Y-Delta motors, which provide high efficiency and good power-factor at three horsepower ratings—a low rating for present production, a medium rating for an increased allowable, and a high rating for full production or for pulling rods and tubing.

These motors, which cost little more than ordinary single-rated motors, will lower your pumping costs and will take care of your future as well as present requirements.

2. GEAR-MOTORS

You can obtain new economies in slow-motion pumping by using G-E gear-motors because they combine the economies of high-speed motors with accurately cut helical gears that run in a bath of oil. Gear-motors are efficient. They deliver the full-rated motor horsepower at the output shaft. They reduce installation expense, too, because they are so compact and easy to install.

Additional information on these dependable motors can be obtained at the nearest G-E office, or from General Electric, Schenectady, New York.

200-695H

GENERAL ELECTRIC